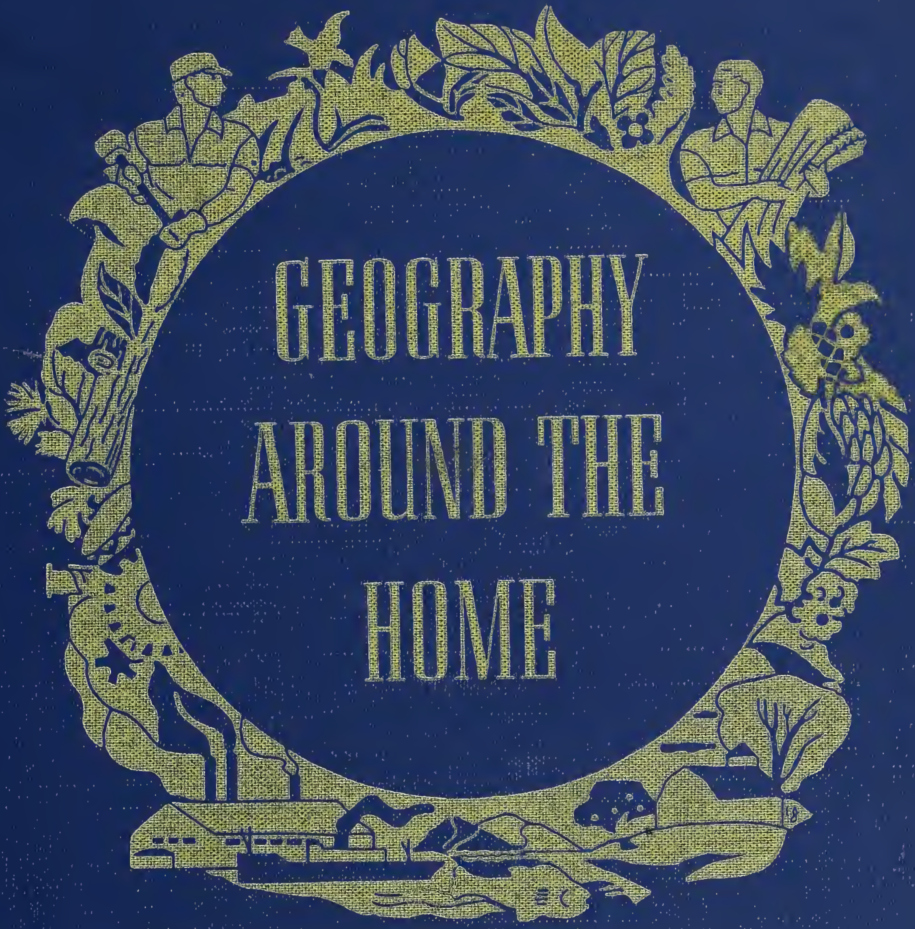

# GEOGRAPHY AROUND THE HOME

McCONNELL — HUGLEY

D McNALLY SOCIAL STUDIES SERIES

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# GEOGRAPHY

RAND M^c^NALLY & COMPANY

Printed in U. S. A.

# AROUND
# THE HOME

**WALLACE R. McCONNELL and LAURA MENGERT HUGLEY**

Drawings by **HELEN JOHN**

**GEOGRAPHY AROUND THE HOME** ★ *A Book of the Rand McNally Social Studies Series*

New York ★ CHICAGO ★ San Francisco

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# *To the Teacher*

*Geography Around the Home* is a simple presentation of the geography of home life and community life. It deals primarily with food, shelter, and clothing, since these are the fundamentals of living; and with interdependence among individuals and among communities, since an understanding of interdependence cannot begin too early if this is ever to be one peaceful world.

Young children are likely to think of the essentials of living only as their needs arise. They are hungry and they want something to eat. Their garments are worn or outgrown and they know that new garments are needed. They want shelter from intense heat or cold, from rain and storm; and they sense the protection which their homes afford.

Yet most children are likely to take these essentials for granted; and it is unlikely that they make any effort to classify them or to consider their sources. Nor do children usually think of the work that must be done to supply their simplest needs and that the work is done by many people near and afar.

It is the purpose of *Geography Around the Home* to aid the teacher in directing children to classify the essentials of living; to help them discover the sources of some of these essentials; and to give them an elementary understanding of the interdependence that exists among members of a family, among the people of a community, and among communities themselves.

At the very beginning of *Geography Around the Home* several typical communities are presented for study and comparison. These are Little Town, Little Farm, and Big City. Each of these studies presents simple phases of everyday life, and the child is invited to compare them with each other and with his own community. At the same time he is led to see that everyone depends upon other people.

"We have everything here," say the people of Little Town, and even a young child realizes that this is a common expression. But almost at once he is made sharply aware that the people of Little Town do not have everything. They depend upon other communities even for their daily bread.

"We have everything here," say the people of Big City. Again the child is soon made aware of the fact that Big City could not long survive without food from orchards and fields, and without raw materials from many sources. Over and over interdependence is stressed: between rural and urban life; between cotton fields and textile factories; between ranches and faraway industries—to mention only a few examples.

Transportation and communication are treated not as topics apart, but as integral factors of home and community living. They play their definite parts in the growing interdependence among communities—a phase of modern life which is simply but amply illustrated.

Woven through these stories of modern living is a pattern of history—a simple pattern, but one which satisfies the child's natural craving for "once upon a time" stories; and at the same time gives him many opportunities to contrast older methods of procuring food, of building homes, of making clothing, of traveling in ways which he knows.

The content is written in an appealing style which is colorful, dramatic, and sometimes mildly humorous. One of the outstanding features of the style is the continuity which is sustained throughout the entire book. The reader moves excitedly from wheat field to orange grove to ranch to fisheries and on. He meets many friends, and finds to his delight that these friends are related—not by ties of blood but by the ties of common needs and interests which are the strongest of all ties.

Map symbols and the terminology of more advanced geography have been purposely omitted. It would be wrong to assume, however, that no contribution to the child's ability to understand geographic terminology has been made. Throughout this book great effort has been made to make vivid, concrete, and real many simple things of geographic significance. These will later be represented by symbols on maps. One had as well give a child who has never seen a dog the word d-o-g and expect him to know the animal as to give him the symbol ⊙ for city and expect him to understand what a city is without having first had experience with a city.

The stories in this book are "the simple stuff of geography." They are about the real things that "lie behind" map symbols—towns, cities, farming, railroads, airlines, highways. These everyday things are actually tied together into their real geographic relationships. With the understandings begun here, geographic language and symbols will be seen to have substantial meaning when they are used in more formal texts. The symbol follows the reality. We here begin learning about simple geographic reality. It is with the preparation for the understanding of things geographic that this book is primarily concerned.

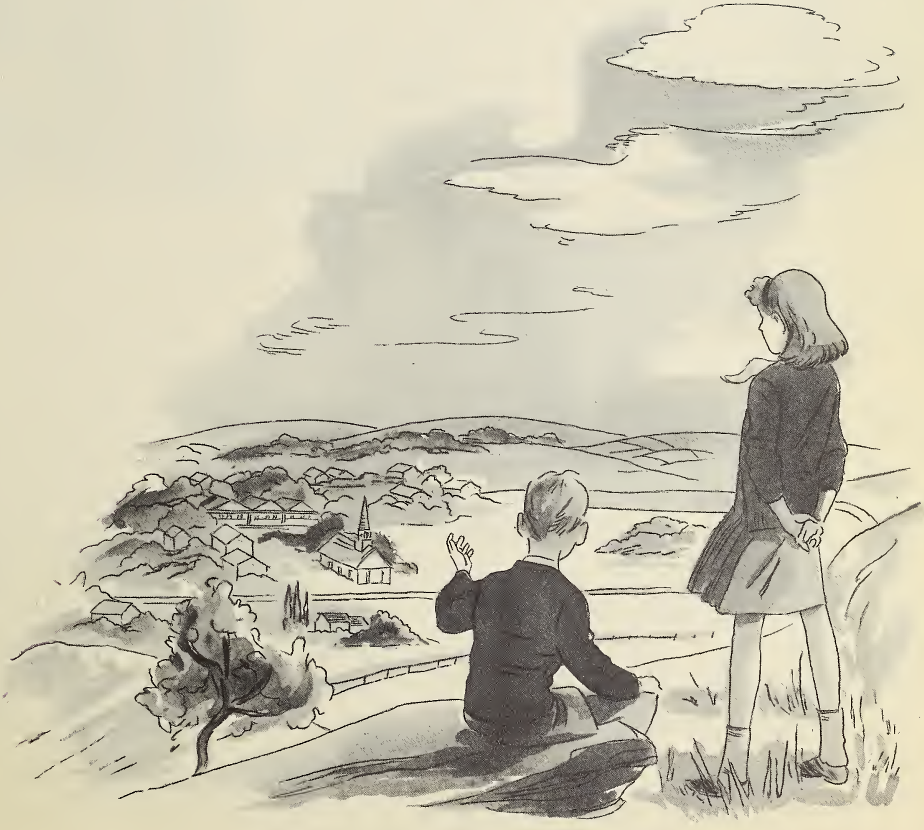
Particular attention has been given to the pictures which illustrate and enrich the stories. With small children the illustration becomes a most important teaching tool. The pictures for this book were planned with that idea in mind. They are numerous and large. In every case the best possible illustration for the teaching purpose at hand has been used. In some cases a photograph provides the most vivid and accurate portrayal of a situation. In other cases, a wash drawing is a more effective medium for presenting a situation or for carrying out an important teaching purpose. Therefore, photographs, drawings in black and white, and four-color drawings have been used in the illustration of this book. In every case painstaking care was used to make sure that the picture contributed to the understanding being developed by the authors.

With the world closely knit together by the advance of technology, every country has an inescapable obligation to be intelligent about its newly found neighbors. Without any definite intention to build a world like this, we suddenly find ourselves living on each other's doorsteps. We do not have to approve everything our neighbors do, but we face the necessity of living close together in the same world with them; and if we remain ignorant about them—how they think and live and what social and cultural purposes motivate them—the distrust and suspicion which ignorance always creates will in the end lead to new catastrophes. No intelligent man can ever again say about any political event or social process in any part of the world: "This is nothing that need interest me."

RAYMOND B. FOSDICK
**President, Rockefeller Foundation**

Helen John

# *Where People Live*



# LITTLE TOWN

## *All Around the Town*

It is early morning. The sun climbs slowly over the hills, bringing another new day.

Little Town's clock sings out the time. One, two, three, four, five, six, seven. Seven o'clock.

All through the night Little Town has been sleeping. While it was sleeping, a watchman walked slowly along its quiet streets. He looked in through the store windows. He looked through the windows of the bank. He looked around at other places of business. He made sure that all was well in the town. Now he has gone home to sleep.

Now everywhere there are signs that the town is waking. A milk truck moves slowly from door to door. A man sets bottles of milk on porches and doorsteps. A door opens and someone comes out to get the milk. Inside all the houses people are getting ready for another new day.

A boy with a dog at his heels hurries along the street. He is going to the grocery for something that is needed for breakfast at his house. A man hurries along the street, jingling the keys in his pocket. He is going to open his store. Here and there are other men going to work. Little Town is waking.

Little Town sits right on top of pleasant hills, so it can be seen for miles around. Its houses are half-hidden by the big trees that march along the streets. But the steeples of its churches and its water tower stand out clearly against the sky.

The hills of the town are not steep. People do not have to huff and puff and stop for breath as they go walking along the streets.

Two broad, smooth highways of cement run through the town. One runs east and west, and one runs north and south. They run on and on through other towns. They run on to big cities.

From the highways run other roads. Some are narrow, winding, twisting dirt roads. They run through the farming lands. These roads help to bring the people of the farms and the town closer together and make them all one community.

The two main highways that run through Little Town cross each other in the center of the town. Long ago people made a little park at the crossing. They call it the square.

In summer the square is bright with flowers. In winter, when there is snow, the children sometimes meet there to make snow men where all who pass may see them. They make tall snow men with long arms stretching out, so that they look like traffic cops. There are no real traffic cops in Little Town.

The two highways are the main streets of the town. There are other streets, but none of them is so broad or so smooth as the highways.

Many people travel through town every day, in trucks, in busses, in automobiles. Some of them stop to buy gas and oil at the filling stations. Some stop to get something to eat. A few stop to sell or deliver goods. But most of them go right on to larger towns or cities.

Shining tracks of steel run through Little Town. They are the railroad tracks. Over these tracks run long trains with a clickety-clack! clickety-clack! when they go through without stopping. Over these tracks run trains that come to a squeaking stop at the station. When the trains stop, goods are unloaded for Little Town. Things to eat, things to wear, things for the homes, and other goods.

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Little Town sits on top of a hill. Here are pictures of four other little towns. Some little towns have high mountains all about them and some have forests on all sides.

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Library of Congress

Other little towns have rivers flowing through them. Some are on flat land far from hills or mountains and far from a river or a forest. Can you think of another kind?

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Little Town is friendly

Little Town is a friendly town. Almost everyone there knows everyone else. If you were to walk along the streets, you would hear people calling to one another. People would speak to you. Even those who do not know you would speak to you. That is the way of a small town. In large towns and cities people do not speak to those they do not know.

Little Town is pretty to look at. All along the streets are pleasant homes. Some of them are built of rosy brick. Some are built of stone, some of cement, some of lumber.

Nearly all the houses are set in deep yards, green with grass. It is the kind of grass that you like to walk in barefoot, or lie in, or roll on. In all Little Town there is no sign that says, "Keep off the grass."

Almost everyone in town has a garden. The gardens are bright with many kinds of flowers from funny-faced pansies to tall lilies. They help the town look pretty.

Wouldn't it be too bad if people didn't enjoy eating? The people of Little Town do. They raise good things to eat in their vegetable gardens—crisp little radishes, smooth white onions, shining tomatoes, red beets, sweet corn, long beans and fat beans, and other vegetables besides. Some vegetables look pretty in gardens—almost as pretty as flowers.

The women of Little Town can fruit and vegetables to use in winter. If you were to walk through the town in late summer, you would sniff the spicy smell of tomatoes cooking. You would catch a whiff of simmering grapes or apples. Um-m-m-m! You would draw a long breath and say, "Little Town smells good!" It does smell good. It looks pretty and comfortable. It is friendly.

## *The Stores of Little Town*

Little Town is busy. The stores and shops are open from seven in the morning until six in the evening. Day after day, every day, except Sundays and holidays.

People of the town are always needing things. People of the farms near by are always needing things. But, of all the things people need, food is the most important.

Had you ever thought that you can get along for weeks and weeks without new clothes? Had you ever thought that you can get along without new things for yourself and your home for a long time? But you need food every day. Everyone does.

That is why so many farmers work to raise food. That is why so many other people work to prepare food. That is why so many trains and trucks carry food from one place to another. That is why so many stores and shops sell food.

In Little Town are five grocery stores. In each store are cans of fruit and cans of vegetables and cans of meat and cans of fish and many boxes of breakfast food. Loaves of bread wrapped in waxed paper lie on long tables. Beside them are cakes and cookies, neatly wrapped.

Almost always, even in the winter, there are fresh vegetables in the grocery stores. Cabbages, tomatoes, carrots, crisp heads of lettuce are piled on racks or tables. In some stores they are kept fresh by fine sprays of cold water. In some they are kept fresh in refrigerators.

Grocery stores nearly always have apples to sell. Sometimes the stores have peaches and pears. Sometimes they have boxes of big strawberries or boxes of red cherries or round little bright little cranberries. In late summer and on through the fall, grapes are spread out on long tables. There are rose-colored grapes and purple grapes and pale-green grapes that look as if they had been brushed with silver.

Lemons, oranges, grapefruit, and little green limes lie on the racks. Near by hang bunches of ripe bananas. Each fruit has its own pleasant odor. All the odors together make a grocery or a fruit store an exciting place.

Little Town has a fine meat shop. The butcher who owns it buys some of the meat for his shop from the farmers of the community. He buys some of it from the great meat-packing houses in large towns or cities.

The butcher opens his doors early. Long before that time he has been busy. He has cut the meat into steaks, chops, and roasts. He has put them in the showcase, so that people may easily choose what they want. The showcase is also a refrigerator, in which the meat keeps fresh.

Five grocery stores and a meat shop sell food to the people of Little Town and its community. Only one store sells clothing. That is the dry-goods store.

Perhaps you have never seen a store like Little Town's dry-goods store. It is something like a city department store because it has many different things for sale. But a city department store is much larger than Little Town's dry-goods store. In a city store, one department sells shoes. Another sells ladies' dresses. Another sells clothing for boys and girls. Another sells men's clothing. And many more. One department may take up a whole floor of a large building.

Little Town's dry-goods store also has many departments. But they are all in one room. Its walls are lined with shelves. Some of them are full of goods by the yard. Some are full of towels, of washcloths, of bedding, and of other things for the home.

The floor is crowded with tables and showcases. On one table are hats for ladies, and on another are

Shopping at the dry-goods store

hats and bonnets for little girls. On another are boxes of sweaters and boxes of shirts. In a showcase are cute little bonnets and coats for babies. In another are gloves and bags and stockings and handkerchiefs. Can you imagine such a crowded store?

Right across the street is the shoe store. Its walls are lined with shelves that are full of boxes. Inside the boxes are shoes for men and sandals for children, and high-heeled shoes for ladies, and soft slippers for old people whose feet are tired. Overshoes for young and old stand on a long table. Boots for farmers and fishermen stand on the floor.

At the back of the store is a sign which says,

SHOE HOSPITAL

There old shoes are mended.

Next door is the hardware store, which sells goods or wares of metal. Such things are hard, so you see how the store gets its name.

In summer the hardware store opens very early. Farmers often come early to town to get something they need right away. They may need a new part for a tractor, a new hoe, a new plowshare before they can begin the day's work on the farm.

The hardware store also sells many things for the home. Little things, such as knives and forks and cups, and big things, such as washing machines. The store also has a department where furniture is sold.

The drugstore sells pills and powders and cough sirups and other medicines. Soaps and shaving creams and toothbrushes and tooth paste are for sale there, too. But you cannot buy ice cream at Little Town's drugstore. You must go to the confectionery to buy ice cream and other sweets.

Do you know what a confectionery is? A confection is something sweet to eat. A confectionery is a shop where sweet things are sold. Candy, ice-cream sodas, and many other delicious sweet things are sold in Little Town's confectionery.

The walls above the soda fountain are covered with mirrors. On the mirrors are the names of all the flavors you can buy at the fountain. Chocolate, vanilla, lemon, strawberry, and others besides. Sometimes it takes you a long time to decide which flavor is best.

Candy bars, lollipops, little hard candies, chocolate creams, and other delicious things are stacked in glass cases. In one case are large boxes of candy. Sometimes you will see boxes trimmed with holly and tied with red ribbon. And sometimes you will see boxes trimmed with hearts, and boxes marked "Happy Birthday." These are for special days, you know. They cost a great deal of money, but it doesn't cost anything to look at them, and it costs nothing at all to wonder what is inside the boxes.

At the dime store most things cost only a dime or a nickel. Combs, soaps, needles and pins and hairpins, small pieces of hardware, dishes, and glassware are sold at the dime store.

All the stores of the world are not like those of Little Town. Perhaps those you know are not like Little Town stores. How are they different? Are they larger or smaller? Are all the goods in one room? It will be fun to tell about the stores you know.

## *Other Places of Business*

There are other places of business in Little Town. The post office is one of them. Just as the old town clock is striking six, the postmaster or one of his helpers opens the doors. Work begins right away.

Mail goes out early in the morning. The postmaster and his helpers get the mail ready. They gather up the letters and the cards and the packages. They stamp them with the name Little Town and with the date. They put them into a big bag.

The bag is locked, and one of the helpers takes it to the station and puts it on the train. The mail is sorted on a special car, called a mail car. Some mail is sent east, some west, some north, and some south.

In the middle of the night a train brings mail to Little Town. That mail has to be sorted. The postmaster or his helpers read the address on every letter, every card, every other piece of mail. They put each piece in the right place. Some pieces are put into post-office boxes. Some are put into general delivery.

After a while people come to get their mail. Some have their own boxes for mail, some do not. Those who have no boxes must ask for their mail at the window marked

GENERAL DELIVERY

The postmaster has lived in Little Town many years. He knows everyone in the community from the newest baby to the oldest grandfather.

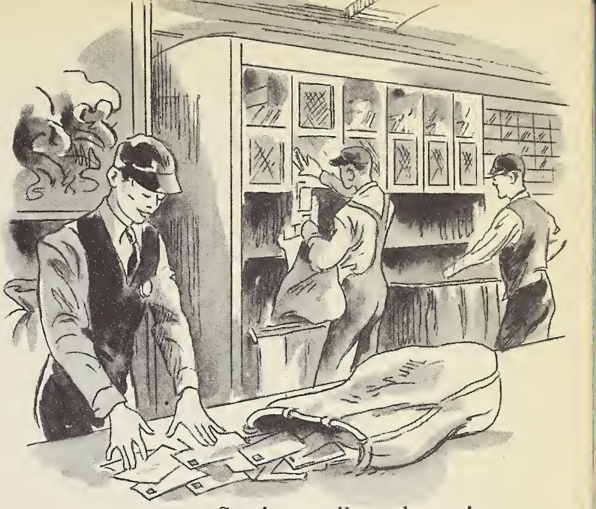
He likes to do favors for people. He will look over his glasses and say, "Oh, Tom! A letter came for your grandmother. Will you take it to her?" He will call, "Jane! Here's your aunt's newspaper. Will you take it to her?" He will call to a farmer and say, "Hey! Bill! That new part for your tractor has just come in!" You see how helpful he is.

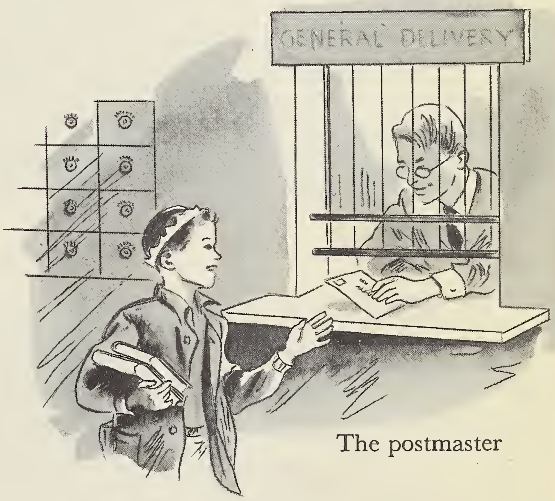
Farmers do not often call at the post office for their mail. It is delivered by men called rural mail carriers. Each family has its own mailbox, which stands beside the road. Carriers can easily put the mail into the boxes without getting out of their automobiles. They also pick up the mail the farmers want to send.

Each rural mail carrier has his own route. Every day, except Sundays and holidays, he drives over that route. Out of town over the smooth highway he goes. By and by he turns his car into one of the narrow, winding, twisting roads. Bumpety-bump! goes the car. He slows down. He has to drive slowly over such roads. After a while he will come to another good road and then his car will run smoothly again.

Over good roads and bad roads, now slowly, now swiftly, he comes back to Little Town at the end of his route. He drives to the post office. There he takes out of his automobile the bags of mail he has collected along the route. His day's work is over. But tomorrow he will go over the same route again.

Sometimes in some parts of the country the roads are covered with ice. Sometimes they are drifted with snow. Sometimes they are muddy or flooded with water. No matter. The


Sorting mail on the train



The postmaster

The rural mail carrier

mail carriers go on their routes every day, if they possibly can.

Near the post office is Little Town's bank. That is the place where most people put the money they have saved. Across the windows are heavy steel bars. Above the door is an alarm which would sound with a loud clang! clang! if a robber should try to break in. Inside are boxes of steel where the money is kept.

The bank not only takes care of people's money. It lends money, too. Sometimes a family borrows money to buy or to build a new home. Sometimes farmers borrow money to buy new machinery or to buy more land. And sometimes business men borrow money to buy goods. Of course, when people borrow money they have to pay it back. And they have to pay the bank for the use of it.

Little Town has a hotel, called "The American House." The hotel never closes. It has a big dining room where good food is served, and many bedrooms where travelers may spend the night.

In the hotel is a barber shop where men and boys go to have their hair cut. On Saturday nights, when the farmers come to town, that barber shop and one across the street are as busy as busy can be. All the men of

On Saturday the farmers come into Little Town to shop and take care of their business.

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Some of the grain in this grain elevator may be made into flour for cookies and cakes.

the community want to look their very best on Sundays.

The women of the community want to look well, too. They have their hair trimmed and curled at Little Town's beauty shop.

At the foot of one of the hills of Little Town is the railroad station. There several times a day a train comes to a squeaking stop. The door of a freight car slides open. Men quickly unload boxes, crates, and big packages. Then the train goes puffing along on its way.

Near the tracks and not far from the station is the grain elevator. Farmers bring their wheat, corn, oats, and other grains to the elevator. The grains are stored there until they are shipped away.

Near the railroad station, too, are the stock pens to which the farmers bring their hogs, cattle, and sheep. From the pens the animals are loaded on freight cars to be taken to meat-packing houses.

There are other places of business in Little Town. There are the filling stations where people buy gas and oil for their cars. There are the garages where people take their cars when anything is wrong with them.

A plumber's shop is on one of the side streets. Plumbers put new water pipes into homes. They mend broken pipes. They put kitchen sinks and bathrooms in new houses and old.

Next door is the electrical shop. Electricians go out from their shops to wire new homes for electricity. They repair electric wires when something goes wrong. They sell electric washing machines and ironing machines and sweepers and such things for the homes of the community.

Nearly all the men of Little Town do something, you see, to make a living for themselves and their families. Not all of them work in stores or shops, however. Several men make their living by painting and papering. Several men work at putting up new buildings or repairing old ones. They are carpenters. One man looks after the telephones. Another man sends and receives telegrams.

Some men repair telephone lines

Several men work in Little Town's fine creamery, where butter is made. Later on in this book you will read more about the work of the creamery.

Choose one of the places of business in Little Town and plan to talk about it in class. To do so, find out about such a place in your own town. It may be the post office, the bank, a plumber's shop—anything you choose.

## *Little Town Likes to Live Well*

People need more than food, shelter, and clothing. They need other things, too. They want to live right. They want to be healthy. They want to know what goes on in the world. They want to enjoy themselves.

That is why the community of Little Town has churches and a school, a library, and a newspaper. That is why three doctors live in the town to try to keep people well and to heal them when they are sick. That is why Little Town has a movie.

Down a side street of the town the following sign plainly shows that a schoolhouse is near.

SCHOOL
DRIVE CAREFULLY

The schoolhouse is a large building. Part of it is for high school, part for grade school. On one side of the grounds are slides and swings for the grade children. On the other side is the playground for high-school boys and girls. Near by is the football field.

A wide driveway runs all the way around the school building. Over the driveway come the busses that bring the children in from the country.

Near the school is Little Town's library. It is a very small library, but the books on its shelves are of many kinds. Some are especially for teachers, some for parents, some for farmers, some for gardeners, and some for children. Many books are interesting to almost everyone.

The library is not open every day. Little Town does not have money enough to keep a librarian there all the time. But it is open four days of the week and on Saturday evenings when farmers come to town.

The newspaper of the community is called the *Weekly News*. That is a good name, because it is published once a week and it is full of news. It tells what family has a new baby. It tells about the weddings. It tells who is sick and how the sick people are getting along. It tells who had company and who went visiting.

The *News* also advertises what the stores and shops of Little Town have to sell. Sometimes the stores advertise special sales when prices are lower than usual. The women read the advertisements, looking for bargains so that they can save money.

## *Safety for Little Town*

You know that fire is your friend, a very comfortable friend, especially on a chilly day. But fire is dangerous, too, you know. Because it is so dangerous, most towns and all cities have fire departments. They have many stations where big fire engines stand, always ready. Men who have been trained to fight fire are always on duty at the stations, ready to go anywhere in the city.

Little Town does not have a fire department like those in big cities. It has only one fire station, and no one at all is on duty there. But a big fire truck stands in the station. It has an engine, a ladder, and yards and yards of hose. And Little Town has a volunteer firemen's club.

Did you ever hear of a volunteer firemen's club? A volunteer is a person who is willing to do some duty for the good of other people. Thus a

Fighting a fire.

volunteer firemen's club is made up of men who are willing to fight fire for the good of the town. They are not trained so well as city firemen are. Yet they do very well, and they get no pay for their work.

Just imagine that a fire in Little Town has started where no one wants it to burn. It spreads quickly. The town is in danger.

Someone sends the alarm to the station. The whistle at the station blows with a Whee-ee-ee! It grows louder, Whoo-ooo-ooo!

Every volunteer fireman stops doing what he is doing. The cook at the hotel kitchen stops stirring the soup. A clerk in the bank stops counting money. A clerk in the grocery store stops counting eggs. The painter lays down his brush, and the plumber lays down his tools.

These men and more besides hurry to the station. They pull on their big boots. They put on their waterproof coats. They put on their helmets. They jump onto the sides of the fire truck. Clang! Clang! Clang! Everyone gets out of the way. The big fire truck speeds down the street!

One fireman is the chief. He gives the orders. "Couple the hose!" he shouts. The hose are quickly fastened to the fire plug. "Turn on the water!" he shouts. Whoosh! There is a rush of water over the flames. Great clouds of steam and smoke roll up toward the sky.

"Stand back!" a fireman calls to the people who have come to look on. Most of them are in the way. Sometimes they keep the firemen from working as well as they should. "Stand back!" calls the fireman again. The people move back. "Turn the hose over there!" shouts the chief. "More water there!"

Sometimes the ladder is needed. A brave volunteer climbs up the ladder carrying one end of the big hose. Whoosh! A stream of water spouts out of the hose into the second floor of the building.

Every fireman does his best. Every fireman works as fast as he can. Soon the fire is out. The danger is over.

Then the volunteer firemen wind up the hose on the truck. They carry the ladder back to the truck. They take the truck to the station. There they take off their helmets, their coats, and their boots.

Each volunteer goes back to his own work. The cook goes back to stirring the soup. The painter goes on with his painting. All the others go back to their work, and business goes on as usual.

Have you been wondering where the firemen got the water to put out the fire? It came from the great tank which sits on top of the water tower. You remember that the tower can be seen a long way from the town.

The tank holds gallons and gallons of water, which comes from the town's reservoir. This is a great basin lined with concrete, which will hold a great deal of water. Rain water and the water from melting ice and snow are stored in the reservoir. Pumps draw it out and force it into the tank that sits on the tower. From the tank the water is carried all through the town.

Large pipes run underground down one side of every street, just back of the curb. They carry the water to all parts of the town. The fire hydrants which stand near the curbs are joined to the pipes so that water can be drawn from them. Small pipes carry the water into the homes and other buildings of Little Town.

You know, of course, that the water is not fit to drink just as it comes from the reservoir. It is full of dirt and germs which might make people sick. Before it is pumped into the tank, it is run through a filter, which makes the water clear.

If you live in a city, very likely you know something about its fire department. Try to find out more and tell what you know in class. If you live in a small town, tell about your fire department. How much is it like the volunteer firemen's club? Do the people on farms have any way of fighting fire?

How do the people of your town get their water supply? How does a farmer get his water supply?

# LITTLE FARM

## *Morning on the Farm*

If you could sit on Little Town's water tower, high above the town, you would get a fine view of the farms that lie all around. You would see farms in every direction. They help make Little Town. Without them there wouldn't be any town.

Little Farm is very near Little Town. It is so near that the farmer and his family can hear the church bells ring. Sometimes, on a clear morning, they can hear the town clock striking one, two, three, four, five, six, seven. Long before that, everyone on the farm is awake.

The chickens are always the first to wake up. While it is still quite dark, the biggest rooster crows for the morning. Another rooster answers him, then another, and another. Soon they all jump from the roosts to the floor of the chicken house.

The hens jump down, too. They all go out into their yard and begin scratching for food. They stand at the gate and watch for the farmer's wife to fill their trays with grain and with mash made from grain.

Soon the horses in the big barn are awake. They get up and nibble at the bits of hay left in the mangers. They are hungry. They want more food. They paw the floors of their stalls with their big hoofs. They listen for the farmer's footsteps.

The cows have been asleep out in the barnyard. They, too, know that morning has come. They get up and move about. They moo softly. They watch for the farmer. Some of them go to the door of the stable where they will be milked. They stand there waiting patiently.

In the pasture, close to the barn, are the mother sheep with their little lambs. All night they have slept comfortably, their legs tucked under their bodies. Now they get up and move about. Each lamb soon finds its own mother and hungrily draws in her warm milk, all the time happily wagging its tail.

By and by the farmer will put some grain in the troughs for the sheep. They will eat the grain. Then they will wander slowly off to nibble the green grass of the hillsides.

Here and there in the pasture the farmer has put down big lumps of salt. The sheep and the cows lick the salt. It makes them thirsty. Then they go down to the brook that flows through the pasture. They drink deeply of the clear, cool water.

The cows, the sheep, the horses, the chickens, all wait for their food rather patiently. But the pigs do not have such good manners. They set up a great noise. They grunt and they squeal. They crowd around their feed troughs and snatch greedily at bits of grain left there. They push each other about. They complain loudly because the farmer has not yet brought their breakfast.

The farmer and the farmer's boy come out to the farmyard. They feed the horses. They feed the grunting, squealing pigs. They milk the cows and give some of the warm milk to the

The pigs are greedy

calf in a shed all by himself. They feed the cows some hay and a special kind of food.

You can see that all the animals depend on the farmer for food and shelter. And the farmer depends on the animals. The horses work for him. The cows give milk. On the backs of the sheep grows fine wool, which the farmer will cut off and sell. With the money he gets he will buy many things he needs. From the hogs he will one day get roasts and chops, bacon and good little sausages.

## *The Plowing*

When the animals have all been cared for, the farmer makes ready to work in one of his fields. He is going to plant corn in the field. Today he will start to plow.

He looks up at the sky. There is not a cloud to be seen and he is glad. He wants to get the field planted before more rain comes.

He had planned to plow the corn field last week. But heavy rains had made the ground too wet for plowing.

Around and around the field goes the farmer, plowing the furrows straight and deep.

H. Armstrong Roberts

When wet soil has been plowed, it dries in hard lumps or clods. It cannot easily be made soft and fine and loose so that seeds will grow well.

The farmer hurries about. He and his boy harness two of the horses. They lead them out of the stable and let them drink at the watering trough. They lead them to a corner of the field where the plow lies, shining in the morning sun. They fasten the harness to the plow.

The plow is a long blade of steel set on a framework of wood. It is shaped so that it cuts deeply into the soil, making a trench or furrow. At the same time the plow turns the soil over.

"Get up!" the farmer calls to his horses. That is his way of telling them that their work has begun. The horses move forward, dragging the steel blade through the soil.

Around and around the field go the big horses, dragging the shining steel blade. Around and around the field the farmer follows, keeping the plow deep in the soil. He makes sure that the furrows are straight and deep.

When he has finished the plowing, the farmer will go over the ground with a harrow. Not once, but several times. A harrow is a large framework of iron or wood, set with many sharp teeth. It is dragged over the ground so that the teeth rake the soil and crumble the clods or lumps.

A neighbor near by uses a tractor to draw his plow and his harrow. Plowing and harrowing with a tractor is easier and faster than doing the work with horses. But the neighbor near by has a very large farm. He really needs a tractor to do so much work. Farmers who have small farms often get along without.

## *In the Garden*

The farmer's wife has done her work in the house, and now she goes to the garden to do some planting. She, too, will plant corn. But hers is of a different kind. Hers is sweet corn, which the family will eat from the cob when it is ready. Some of it will be cut from the cob, cooked, and canned by the farmer's wife. Some will be sold in Little Town.

The ground has already been made soft and fine for the planting. The farmer's wife marks straight rows all the way down one side of the garden. Then she drops the seeds carefully.

The farmer's boy plants popcorn near by. He wants to raise enough to eat and to sell. Now and then he thinks of what he can do with the money he gets from the corn. Now and then he thinks of the fun he will have popping corn. His mother will pour melted butter over the freshly popped corn. For special times she will make popcorn balls. How good they will taste! thinks the boy. Near some of the hills of corn the boy plants melon seeds. Near others he plants pumpkin seeds.

## A Hen in a Nest

Suddenly the boy hears his mother calling him. He runs to her side. "Look!" she says. There in the grass under a bush sits an old hen. Her wings are spread wide to cover the eggs hidden under her body.

"Oh-ho!" says the boy. "Now why did you hide your nest way out here in the grass?"

The hen ruffles her feathers. She blinks her bright eyes. She clucks. She looks a little angry and a little as if she were saying, "Don't take my eggs away from me. I've had such a hard time finding a good place for them. Cluck! Cluck!"

The boy lifts the hen from the nest and counts twelve eggs. Now she is both frightened and angry. She clucks loudly. She pecks fiercely at the boy's hands.

Don't take my eggs away from me!

Ewing Galloway

"Well, well!" laughs his mother. "Put her down. We'll let her have her own way. It is a good thing that we have a fence around the garden, or she would soon be scratching up our young growing plants."

In twenty-one days, if the hen is patient and cares for her eggs, she will have twelve downy chicks. She will keep them safely under her wings for a day or so. Then she will lead them out into the big world. She will teach them how to scratch in the ground, how to eat, how to drink, and how to know when danger is near.

All week the work of the farm goes on. The farmer and his family do not go to Little Town during the week unless they need something or have something to sell. But on Saturday night they will all go into town.

The farmer's wife will take all the eggs she can spare. She may take a few chickens dressed and cleaned and ready to cook. She will sell these things. With the money she gets she will buy things that cannot be raised on the farm.

She will visit with the friends she meets in the stores. She may get a book or two at Little Town's public library. Then, if it is not too late, she and the farmer and the farmer's boy will go to the movie.

H. Armstrong Roberts

The boys and their dog are out to catch a big one. Would you like to go along with them?

## *"We Have Everything Here"*

The people of Little Town's community think they have a good place to live in. They think they have a pleasant way of living. Almost everyone works hard, of course. Even the children have some work to do. But everyone has good times, too.

Farm children visit in town and children from Little Town visit the farm. They have picnics and parties. They fish in the river. They wander over the hills for little wild strawberries and big juicy blackberries.

Grown people have pleasant times, too. They have picnics and parties. They go visiting and shopping. They go on automobile trips.

Most of the women belong to clubs. Some belong to a garden club. Some belong to a music club. Others belong to church clubs.

Most people of the community like to help one another. The farmer's wife reads in the *Weekly News* that Mrs. Green has company. She sends Mrs. Green some big red strawberries, freshly picked, and with them some thick yellow cream. Mrs. Green takes care of Mrs. Brown's baby while Mrs. Brown goes to the dentist. Mrs. Blue bakes a cake for Jimmy White's birthday. Mrs. White lends her best dishes to Mrs. Blue when she is having a party or entertaining her club.

The men help one another in business. The man who owns the shoe store buys clothing for himself and for his family at the dry-goods store. The man who owns the dry-goods store buys shoes at the shoe store. Both men buy from other stores. In that way they all help one another. They help other people, too.

The men have a club which meets to make plans for the good of the town. At Christmas time they have a wonderful party for all the children of the community. A big tree is set up in the little square. The children and the grownups, too, gather around the tree and sing Christmas songs.

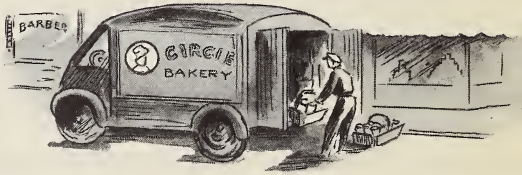
The people are very proud of their community. They say, "We have everything here. Comfortable homes, good schools, a fine library, churches, good doctors. The air is fresh and healthful. We have good water, pure milk. The farmers raise big crops of grains, fruits, and vegetables. Dairy farms supply the city dairy with milk. We make the best butter that money can buy. We have everything here."

People are only boasting when they say, "We have everything." They know very well that they depend on other communities for a great many things, even for some of their food.

Every once in a while the community of Little Town finds out how much it depends on other communities. Sometimes in late winter or early spring heavy rains flood the valleys around Little Town. Highways and railroads are under water. Trucks and trains cannot run. Not even the bread trucks can get through.

All the mothers have to bake for their families—bread or pancakes or muffins or biscuits. Then they know and everyone else knows just how much Little Town's community depends on other communities.

That is the way of the world. Most people depend on other people for one thing or another. No person can get along day after day without the help of other people.



You can have lots of fun finding out about the different kinds of goods that come to your community. If you live in a big city, learn about your own neighborhood. If you live in a small town, learn what goods come to the stores—how the goods come, where they come from. If you live on a ranch or a farm, learn about the goods of your nearest store.

# BIG CITY

## *Streets and Shop Windows*

Step lively now!

Watch your step!

You are walking down an important business street of a very large city—an enormous city!

On both sides of the street tall buildings reach toward the sky. They shut out some of the bright sunlight. Most of them are dark gray, almost black, with the smoke and the soot that has settled on them.

You cannot stop long to look up at the tall buildings. Crowds of people are all around you walking swiftly, hurrying, hurrying. Some of them walk toward the north, some toward the south. You move along with those going north. And, like them, you walk well to the right. Those going south also walk to the right.

Ewing Galloway

So many people! In Big City everyone hurries, and everyone walks to the right.

Here people do not often stop to speak to one another as people do in Little Town. There everyone knows nearly everyone else. In Big City people downtown do not often meet those they know. Once in a while two friends happen to meet on the street. They step to one side to visit for a moment. Then they hurry on.

Once in a while someone in the hurrying crowd bumps into another person. Both take time to say, "I'm sorry." Then they hurry on.

Fortunately for you, the stores are at your right. You may look in at some of the windows as you walk along. But you should do this carefully. If you want to stop to look at something, don't stop or turn around suddenly. If you do, someone behind you is likely to bump into you.

The sidewalk is wide, much wider than any sidewalk in Little Town. Still, it is filled with people. Some of them are on their way to work. Others are going home after working all night. Some are going to meet friends. Some have business in one of the many tall buildings that line the streets. Some are hurrying to catch trains, busses, streetcars.

Who knows where all the people are going? No one knows. But all of them seem to be in a hurry to get there. That is the way of a big city.

Oh, there is something in a shop window you want to see! You move closer to the right and stop. You look into the window of a pet shop. Soft, furry puppy dogs are playing in the window. You see other pets—playful little kittens, a monkey, birds, tiny white mice in a cage.

Now one puppy comes close to the window and pushes his nose against the pane. He seems to be begging you to take him as your own.

If you are interested in owning the puppy, write down the name of the store and the name of the street you are on. Write also the street number, which is on the window or above the door of the shop. The name of the street and the number of the shop will give you the address of the shop.

It is important to have the exact address of a home or a shop in a big city or town. In Little Town, and in other small towns, almost everyone knows where everyone else lives and where every store is. This is not so in large cities.

Keep well to the right as you go on with your window shopping. The next shop, you decide, is not so exciting. Its windows display parts for automobiles. Next to this shop is an electrical shop. This is full of many different kinds of light fixtures.

It's not much fun to look at light fixtures, so you hurry on. You come to a plumber's shop and then to a hardware store. You do not find these very exciting either.

You walk on and come to a window full of leather goods. Big bags and little bags, shopping bags, purses, and billfolds. All these things are made of fine leather.

On you go, taking care not to be pushed about by the hurrying crowds. You come to a wide window full of flowers, beautiful flowers. Some are in bowls or baskets or vases. Some have been made into bouquets. Most city people have to buy flowers when they want them. In small towns and on farms people raise their own.

On you go until you come to a shop that sells nothing but books. Many of them are displayed in the large windows. Right in the center of the window is a beautiful book, spread open so that you can see some of the pictures. You wish you could turn the pages and look at all of them.

Now you come to a drugstore which has all sorts of things in its windows. It is many times larger than Little Town's drugstore and has many more things for sale. It has a soda fountain reaching all along one side of the store.

The drugstore is right on the corner, and at the corner you come to a stop. Everyone stops, for the traffic light has turned yellow.

A traffic cop stands in the middle of the street. He directs the cars, the busses, the trucks, the taxis that fill the street from curb to curb. He also watches the people.

He helps you to follow the traffic lights.

*Ewing Galloway*

The light turns red. The cop blows a whistle. Traffic going east and west moves slowly on. Traffic going north and south stands waiting. A man in a great hurry tries to cross against the light. The cop waves him back. The man stands tapping his foot impatiently on the curb. He must be in a great hurry.

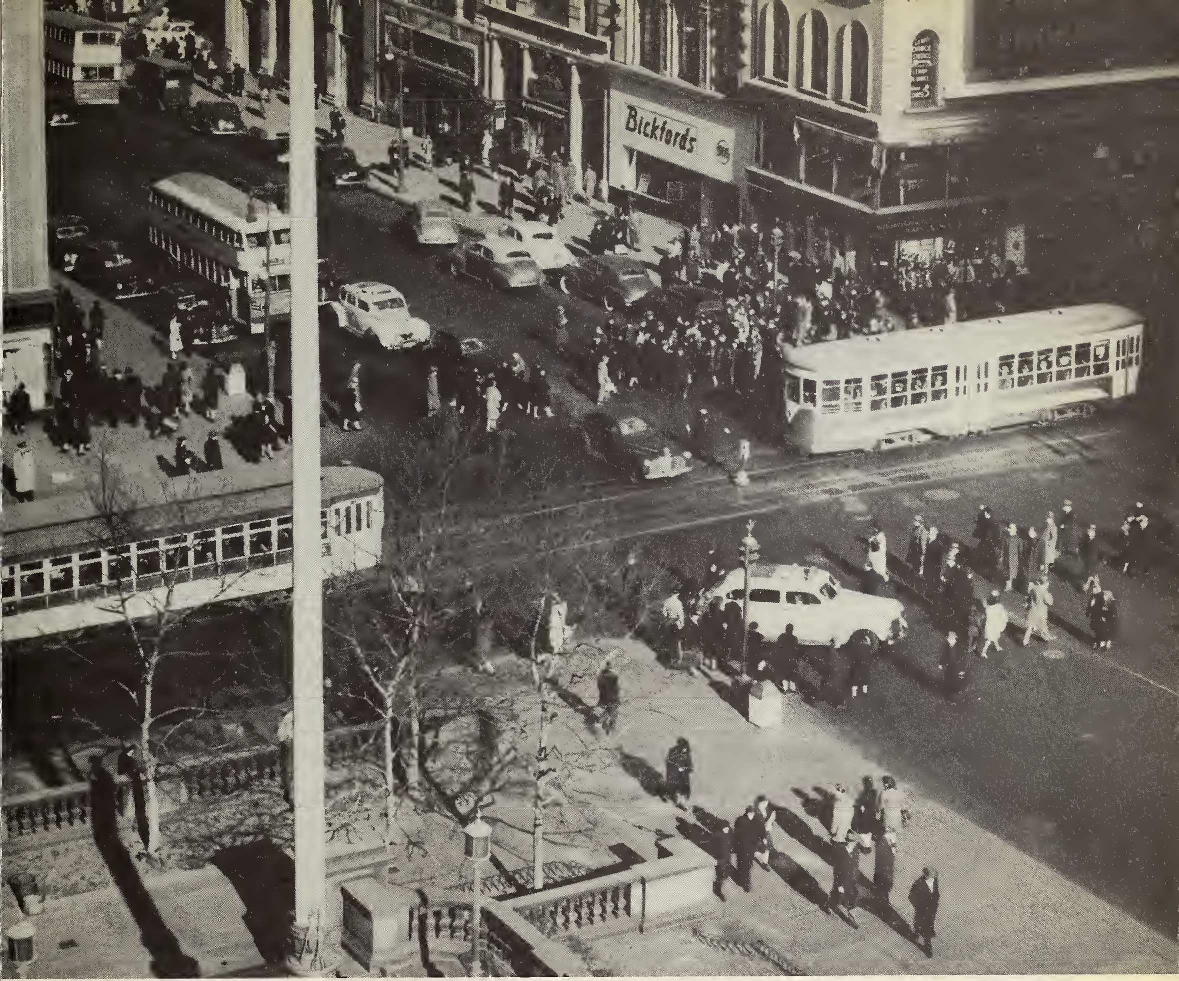
The light changes again, and now north-bound and south-bound traffic may move. It has the green light. Gas fumes fill the air as the cars move. Horns honk.

Now you may move forward again. Step down from the curb carefully. Watch your step.

You come to a restaurant, an enormous restaurant. Through the large windows you see many tables. At some of them people sit eating and drinking. You know it isn't polite to stare at people, so you move quickly on. You come to a shop whose windows are filled with men's wear of all kinds—hats, shoes, suits, gloves.

In the next window are shoes for everyone in the family. So many shoes! You wonder if all of them will ever be sold.

Now you come to a coffee shop where more people sit eating and drinking at a counter and at tables. All at once you remember that you haven't seen a grocery store like the



Ewing Galloway

Do you see the traffic lights? Where is the driver who didn't see them?

grocery stores of Little Town. There are a few such stores in downtown Big City, but not many. This is because not many people have homes in this part of the city. Housewives buy their food near their homes.

You walk on again and come to a store which sells only fresh fruits. You press your nose against the window to look at them. They are as lovely as flowers. You do not even know what some of them are. They must have come from far-away lands, and that is exciting to think about.

## *A Department Store*

All these shops take so much space that before you know it you have come to another corner. The light has just turned red. You wait for the green light. Then you cross the street.

Watching the windows

Now you have come to windows which are wider and deeper than any of those you have seen before. They are full of beautiful things spread out for people to see. People stop to look. They see things they want. They go into the store to buy.

In the first window you see lovely things for ladies to wear. In the next window is clothing for children. In the next is fine furniture. In the next are dishes of china and silver and glass that sparkles and shines.

On you go, following your eyes. You come to a window full of fruits in glass jars. They are of many colors and they look as pretty as jewels. Tin cans filled with other foods stand in the window. You begin to feel hungry. The next window is full of kitchen things. They are not much fun to look at, so you hurry on.

You move on to a window filled with toys of all kinds. Almost you would think that Christmas has come, Dolls, skates, trains, trucks, airplanes, scooters, bicycles—all the things you have ever dreamed of, and more.

Slowly you move on, looking and looking. Shoes, men's clothing, jewels, flowers, and all sorts of other things are shown in the windows. You follow your eyes, walking slowly.

Without noticing just where you were going, you have turned several corners. Without thinking about it, you have walked all the way around a large building. A building so large that it takes up a whole city block! Now you can guess what kind of store this is. It is a department store—a very large one.

You come to an entrance. You have passed several entrances without

thinking about going in. Your eyes were watching the windows. Now you push open heavy doors of metal and glass and you find yourself in an enormous room. You think, "Little Town's dry-goods store would simply be lost in this room!" And it would.

The floor of Little Town's store is crowded. In this department store there is plenty of floor space. Yet there are dozens and dozens of counters and showcases, all set neatly in rows. At some of the counters are chairs so that shoppers may sit while they select what they want.

You look at the gloves, the bags, the ribbons, handkerchiefs, and laces. You see heaps of flowers that look real but are not real. You see many more things besides. But the goods are not crowded together, higgledy-piggledy, as they are in small dry-goods stores. Each kind of thing is in a separate department.

You walk to one side of the enormous room. Here is a row of elevators. A man stands at the open door of one of them. He is the starter. He is saying, "Going up! This car is the next to go up!" Shoppers move near. The elevator girl says, "Step well back in the car, please. Face the door and call your floor."

You get on. The girl closes the door of the elevator. It moves up. "Call your floors, please!" she says. Other people call out, "Second floor, please," "Three, please," or "Fourth floor, please." You do not say anything because you do not know what floor you want. You have not come to buy, but only to look. What to do!

Face the door, please!

On the escalator

You ride to the very top and then you get off. What else is there to do? You look about and see lunch rooms and restaurants. The tables are set with fine silver and glass. A woman comes toward you, smiling pleasantly. "May I help you?" she asks. You tell her that you have come to look at the store.

"Then why don't you go down floor by floor on the escalator?" she says. She leads the way to the escalator. It is a stairway that looks much like other stairways except that the stairs keep moving. Slowly, smoothly, they move downward, carrying people from one floor down to the next. Not far away is another escalator, which keeps moving upward.

You watch the moving stairs for a moment. Then you step carefully on the first one. Down you go, slowly and safely. At first you feel a little afraid. You hold tightly to the rail as it moves with the stairs. It is just as well to hold on, though you are perfectly safe.

As you come to the next floor, you get a fine view of it. You step from the moving stairs and walk around in a kitchen department. Kettles and pans, teapots and coffeepots, electric toasters and irons, knives, forks, rolling pins, cooky cutters—everything that belongs in a kitchen.

On to the escalator and off again. Now you are in the furniture department. Some of the furniture has been placed as it would be in homes. There are dining rooms, living rooms, bedrooms, and kitchens.

Down again. This time you come to a floor of china and glass. Pictures hang on the walls and colored lamps stand on tables. You see several cards which tell you, "Please do not touch." You think, "What if some careless person should pick up that beautiful bowl and break it!" Oh! You walk carefully, taking care not to touch anything.

As you go down to the next floor, you feel less afraid of the moving steps. When you look down at the toy department, you almost forget you are moving. You see floor after floor of things to wear, things to use. You think there must be enough of everything for everyone in the city.

On the main floor of the store you push open the heavy doors and go out into the sunshine. You think, "All Little Town's stores put together wouldn't begin to fill one of these rooms." And they wouldn't. Yet this department store is only one of many such stores in Big City.

Have you ever visited a large department store? Is it like the one you have read about? How many floors did it have? What did you see on the different floors? Did you buy anything? Plan an afternoon story hour when you will read or tell about visits to stores.

## *Trains High and Low*

Not far from the department store you see steps leading down, down, down under the street. Above the steps is a sign which says,

SUBWAY ENTRANCE

A policeman is standing near you on the corner. You ask him about the subway. He explains that under the streets of Big City there are many steel tracks. Over the tracks go trains run by electric power. These are the subway trains.

Such trains do not need to stop for street traffic, because they are under the streets. They stop only at their regular stations. They run so fast! In a very short time people from downtown Big City are carried to their homes miles away.

"Is it dark down there?" you ask the policeman. He tells you that the trains and the stations are well lighted with electricity. You decide, however, not to ride on the subway. You are not sure you could find your way safely back.

Above the street a train runs noisily along tracks set high on a framework of steel. The policeman explains about that, too. He points to a sign which says,

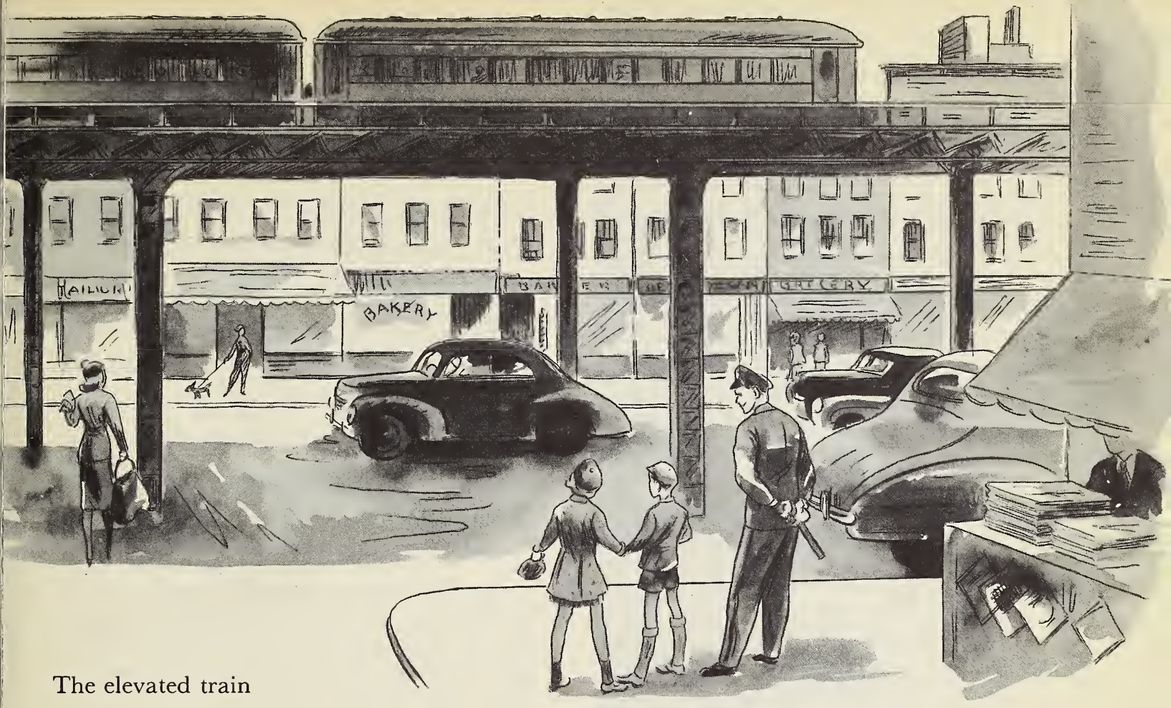
ELEVATED STATION

"If you want to ride on an elevated train," he says, "you climb those steps to the station, and when a train stops, you get on. It is called an elevated train because it is elevated high above the street. The elevated trains are also run by electric power. They run very swiftly, taking people from downtown to their homes miles away in the suburbs."

Then he explains about suburbs. "They are towns near Big City. Most of the houses in suburbs are set in deep yards, green with grass. But there are no farms around the suburbs. There are only towns and more towns. You can travel through suburbs for miles and miles before you come to farm lands."

A streetcar comes clanging and clanging along the street. It stops at a place marked "Car Stop." Some people get off, other people get on. A man comes to the policeman to ask how to get to a certain address which he has written on a card. The policeman gives him the directions. Then he turns again to you.

In the subway



The elevated train

He points to a sign across the street. You look and see

SIGHT-SEEING BUS

"Why don't you take a long ride on that sight-seeing bus?" he asks. "It will take you through some of the most interesting parts of the city. Then it will bring you safely back here." You thank him for his kindness in helping you. Then you hurry across the street to the bus station.

## *A Bus Ride*

You buy your ticket and get on the bus. Other people get on, too, and soon every seat is taken. A man with a megaphone stands at the door of the bus. He is the guide. He talks through the megaphone so that everyone in the bus can hear what he has to tell about Big City.

The bus moves slowly through the crowded streets. Suddenly the guide speaks through the megaphone. "To the right is the city post office," he says. You look and see that it covers a whole city block.

Hundreds of men and women work here, taking care of the mail. Hundreds of men are needed to carry the mail through Big City.

By and by the guide points out the public library. This building, too, covers a whole city block. You think of Little Town's tiny library, and now it seems smaller than ever.

Ewing Galloway

Trucks line up in the wholesale district.

You haven't much time to think about that because the guide is talking again, telling you more about Big City. As you look out of the bus window, hotels, movies, shops, department stores, all seem to be jumbled together. They are not, of course. They seem so to you because everything is so strange to you.

The guide is speaking again. "You are now coming to the wholesale district," he says. Great gray buildings line the busy streets. They are filled with goods of many kinds.

Men who run retail stores like those in Little Town buy from wholesale stores in large cities. All over the land the storekeepers buy from such stores. Sometimes they order what they want by letter and sometimes by telephone. Sometimes they send telegrams, and sometimes, of course, they go to the wholesale stores and select what they want.

As the bus moves on, you turn to look back through the windows. Now you get a better idea of how tall some of the buildings are. They seem to scrape the sky, and that is why they are often called skyscrapers.

The guide is talking again. He says that one building is forty stories high, and another is forty-eight stories high. The very tall one is sixty-five stories. You think, "Sixty-five rooms, piled one on another." That is a good way to imagine how tall the building is.

After a while the bus turns a corner and runs down a wide, smooth boulevard. Many large hotels line the boulevard. All the people of Little Town could sleep comfortably in any one of them. And each person could have a room to himself.

Near the hotels are big apartment buildings. They are tall, though not tall enough to be called skyscrapers. The guide tells how many hundreds of people live in this building, how many hundreds in that one. Each family has its own home, just as each family in Little Town has its own home. In the apartment building all the homes are under one roof––one very, very wide roof.

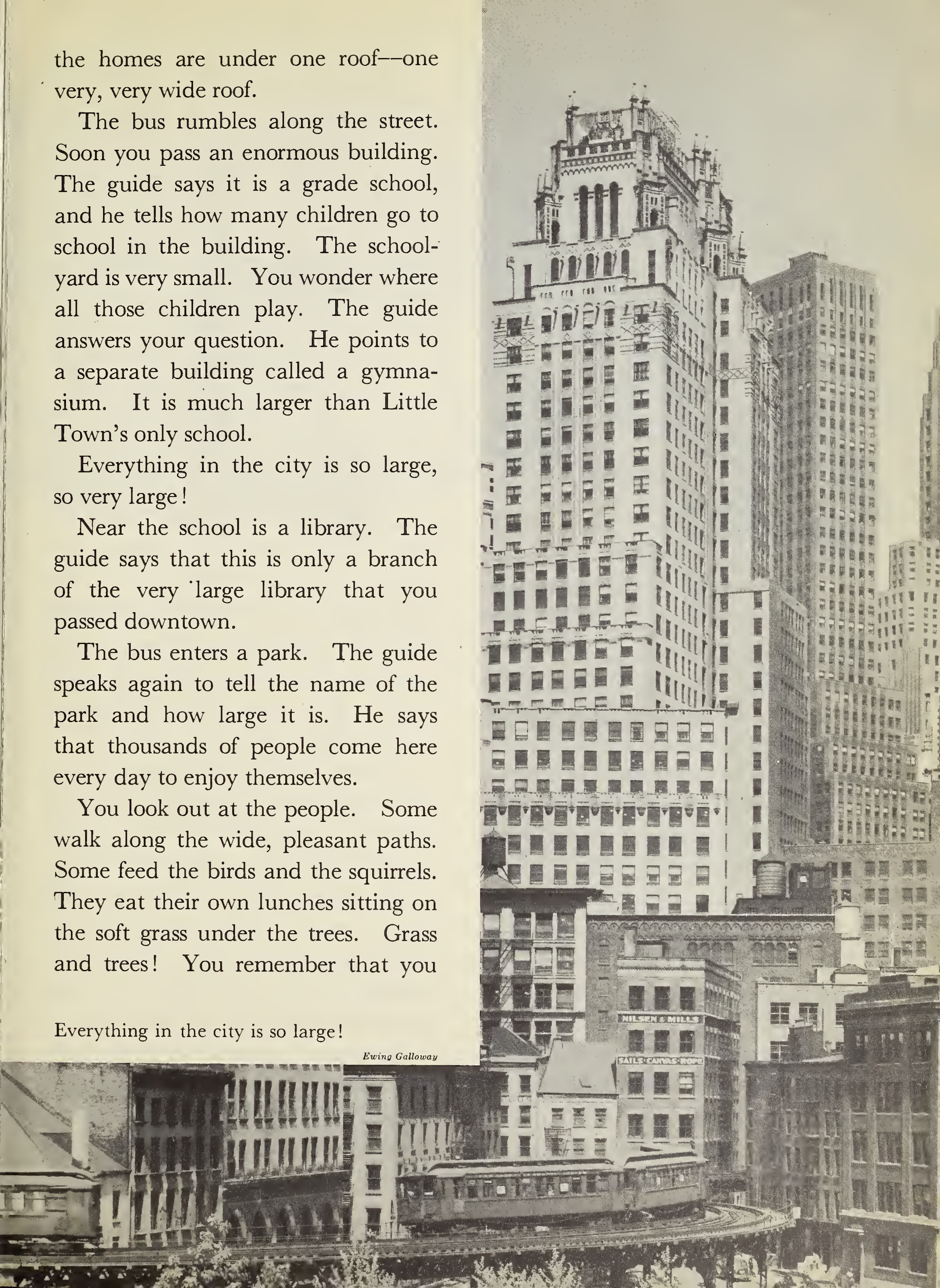
The bus rumbles along the street. Soon you pass an enormous building. The guide says it is a grade school, and he tells how many children go to school in the building. The schoolyard is very small. You wonder where all those children play. The guide answers your question. He points to a separate building called a gymnasium. It is much larger than Little Town's only school.

Everything in the city is so large, so very large!

Near the school is a library. The guide says that this is only a branch of the very large library that you passed downtown.

The bus enters a park. The guide speaks again to tell the name of the park and how large it is. He says that thousands of people come here every day to enjoy themselves.

You look out at the people. Some walk along the wide, pleasant paths. Some feed the birds and the squirrels. They eat their own lunches sitting on the soft grass under the trees. Grass and trees! You remember that you



Everything in the city is so large!

*Ewing Galloway*

All sorts of fun in a city park

had not seen either in Big City until you entered this park.

The bus runs near a small lake in the park. Little motorboats skim over the lake, carrying people who are all having a good time. Some children sail small white boats on a little pond near the lake. Other children run around under the trees among the flower beds.

They do not try to pick the flowers; that is, not if they are well-mannered children. Besides, there are policemen in the park to say, "No! No! The flowers are not to be picked. They are here to make the park look pretty."

At last you come to the end of the park. Your bus turns into a wide city street. It is lined with buildings, set wall to wall. Some of the buildings have tiny plots of grass in front. But many of them have no yards at all.

On and on and on you go. Out of one boulevard, into another. You go down a wide street, down narrow streets, and into another wide boulevard. You enter another large park. In this park is the zoo where many large animals are kept in cages for people to see. The bus does not stop at the zoo, but the guide tells about it.

Soon you come to a part of the city where the buildings are farther apart. In the distance you see tall smokestacks. You are coming to the factory district of Big City.

"That big factory over there," the guide says, pointing to a large building, "is an automobile factory. In the next one farm machinery is made."

The big buildings stretch on and on. Near them stand hundreds of cars, the cars of the workers.

The bus runs past a large meat-packing plant. Not far away are the stockyards where the animals are kept until they are killed.

"Nearly all the work in the meat-packing plant is done by machinery," the guide explains. "Everything is kept as clean as a new pin. Men inspect all the meat to make sure that it is good, healthful meat. They stamp it to show that it has been inspected. The meat is cut up so that it can be stored easily. Some of it is put into enormous refrigerators. Some of it is canned."

The guide goes on to explain that every part of the animal is used in some way. The hides are cleaned and sent to tanneries. There they are made into leather. Animal horns are used to make buttons, combs, knife handles, and other useful things. Animal fats are used to make soaps. Glue and gelatin are made from the hoofs. Some parts of the animals are used in making medicines. Bones are ground up and used to make farm soil richer. Nothing is wasted, you see.

You cannot possibly learn all about Big City in one visit, or in two, or in three, or in many. Still, your trip on the bus and your walk through the streets have shown you what most big cities are like.

All at once you hear two women in the seat behind you talking about Big City—how great it is, how wonderful, and how beautiful. One of the women lives in Big City and she is telling the other one proudly how pleasant it is to live here.

"You see we have everything," she says to her friend. "We have everything—comfortable homes, good schools, churches, libraries, and newspapers. We have shops where one can buy almost anything. We have factories where all kinds of goods are made. We have movies and theaters and parks, so that everyone can have a good time. We have everything in Big City."

But the city doesn't have everything. It does have all the things that were named, and more. Still, it doesn't have everything. It depends on farms and orchards and dairies for food. It depends on many other places for other things.

Just think! What would all the people of Big City have to eat if there were no farms, orchards, or dairies? Besides, Big City has to have many kinds of materials from many places just to keep its factories going. Without other communities, you see, there could be no Big City.

Little Town is a very small part of our great country—our United States of America.

Canada

The United States stretches from a wide ocean on the east to another wide ocean on the west. It stretches on and on and on for three thousand miles. Three thousand miles! That is a greater distance than you can even imagine. Still, you may have fun trying to do it.

Our country stretches for almost two thousand miles from north to south. That, too, is a greater distance than you can imagine. But you may enjoy trying.

What is our country made up of? It is partly made up of small towns like Little Town. Not exactly like Little Town, of course. Each small town is somewhat different from all the other small towns. Some of them sit among pleasant hills. Some are perched high on mountain sides. Some lie along seashores, some along the shores of lakes, and some on the banks of rivers. Some are dotted here and there over the wide plains of our land. Each little town is important to the people who live there.

Little Farm helps to make our country. Many other farms help, too. Little farms, big farms, and middle-sized farms. Each one is important to the people who live on it.

Big City and other large cities help make our country. Some cities are larger than Big City, some are smaller. All of them are important to the people who live there.

All the towns, all the farms, all the big cities are important to one another. That is because all over our land people work for one another. They work for other people they will never know, never even see. And other people work for them. You will see how this is as you read on. You will see that every bit of work done in our land is important to someone.

# *Foods People Eat*

# MILK FOR ALL

## *Patty on a Dairy Farm*

Patty sat up in bed suddenly. She listened. Not a sound came from downstairs. She looked out of the window. The sun had not yet climbed over the hills, but the birds were twittering in the apple trees.

Patty jumped from her bed and ran to the stair landing to look at the grandfather clock. The short hand pointed to five and the long hand to twelve. It was just five o'clock.

She hurried to the bathroom. She brushed her teeth and washed her face and combed her hair. She dressed quickly and ran downstairs.

Mother was already in the kitchen getting breakfast. "I was just about to call you," she said. "But then I was sure you would remember that this is your special day."

"I did remember," said Patty. "I guess I remembered all night. I don't want to keep Uncle Al waiting."

Patty was going to the city to visit Uncle Al and Aunt Alice. She was going to ride with Uncle Al, who drove a milk truck for the city dairy. It was the dairy that bought milk from her father's farm and from other farms around Little Town.

On the windshield of the truck was a sign which said,

NO RIDERS

Uncle Al said that Patty was not a rider; that is, not an ordinary rider. Besides, he had asked the manager of the city dairy if Patty might ride in the truck.

"She could come to the city on the train," Uncle Al explained. "But she wants to visit the dairy because we buy milk from her father's farm. The easiest way to come to the dairy is to ride in with me."

"Certainly, certainly," the manager said. "Anyone from the Hill family is welcome here and is welcome to ride in the truck."

Patty was Patty Hill and the Hill family was her family. Her father had one of the finest herds in the Little Town community. He gave his cows the very best of care. "There's never any trouble about the milk that comes from the Hill farm," the manager of the dairy always said.

Now Patty ran out to the barn to see Blossom, her very own cow. She didn't like to leave Blossom to the care of anyone else. Still she wanted to go to the city.

Patty had cared for Blossom from the time she was a little calf with wobbly legs, soft ears, and big, mournful eyes. She had taught the calf to drink from a pail. She had given Blossom her first hay and meal made from cotton seeds.

Patty had washed Blossom's soft coat many times. She had brushed that coat until it fairly shone in the sunlight. Once she had braided the bushy part of Blossom's tail and tied a red ribbon to it. But Father had said, "Nonsense!" and by that Patty knew that he didn't like the idea. Besides, she knew very well that a cow needs the bushy part of her tail to brush away flies and to fan the air on hot summer days.

Morning and evening Patty cared for Blossom. And Blossom grew and grew until she wasn't a calf any more, but a grown cow. One day she had a little calf of her own. "You see how a herd grows, Patty," said Father.

Patty milked her cow twice every day. Once Father said, "There's no reason why the milking machine shouldn't be used on Blossom as well as on the rest of the cows."

"But I like to milk my cow, Father," said Patty, "and she likes to have me."

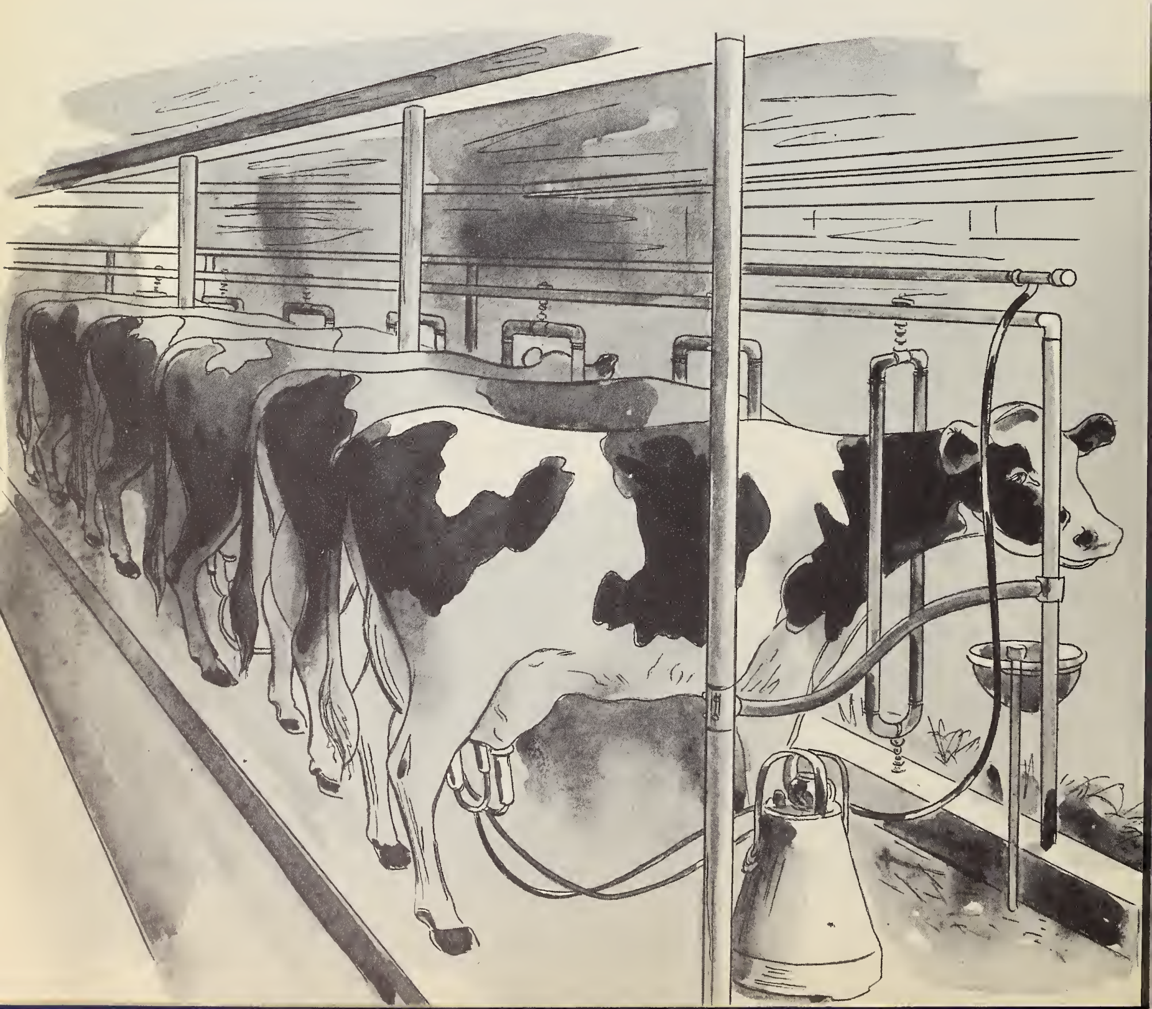
"Then that settles that," Father said, laughing.

Once, just once, Patty had thought of selling her cow. A farmer had come wanting to buy Blossom, and he offered Patty a big sum of money for her. It was such a big sum of money that Patty almost said she would sell her cow. Almost.

Then she looked up at Father. He didn't say anything at all. But there was something in his eyes that made Patty stop to think.

What would she do with all that money? Spend it for something she really didn't need? That would be foolish. Put it into the bank with the other money she had saved? It would be good to have more money in the bank, but it would be better still to have Blossom. No, she told the farmer, she wouldn't sell her cow.

Father said he felt quite sure that Blossom would be a prize-winning cow by the time she was really grown. Some day, when Blossom was older,



a man would come to find out how much milk she gave day after day. He would also test the milk to see how rich it was. Then he would know, and the Hill family would know, and soon everyone in the community would know whether Blossom was really a prize cow.

Now Patty slipped into the dairy barn. Everything inside the barn was painted white, and everything was just as clean as could be. The floor was of concrete. Little gutters had been formed in the concrete. When the floor was washed, the water ran quickly away through the gutters.

The cows stood in long rows on both sides of the barn. In front of each cow was a place for her food. At the side of each one was her own drinking fountain.

Patty listened. She could hear the soft pumping of the milking machine. She hurried to the end of the row to see whether the machine was attached to Blossom. It wasn't.

Patty liked to milk Blossom

She got a brush and brushed the cow's hair until it was almost as clean and shining as Patty's own hair. She got a pail and soon she was sending steady streams of foaming milk into the pail.

In another part of the barn stood a number of large metal cans. The milk was poured into these cans. Lids were put on right away so that no dust or dirt could float into the milk. Then the cans were taken to a part of the barn called the cooler. There the milk, which was warm when it left the cow's body, was set to cool. After the milking was done, the cows were fed. Then they were turned out to pasture.

The grass in the pasture was thick and deep. Very few weeds grew there. Some weeds that cows eat make their milk taste bad. The people who buy the milk complain to the grocer. The grocer complains to the manager of the dairy. The manager complains to the farmers from whom he buys milk.

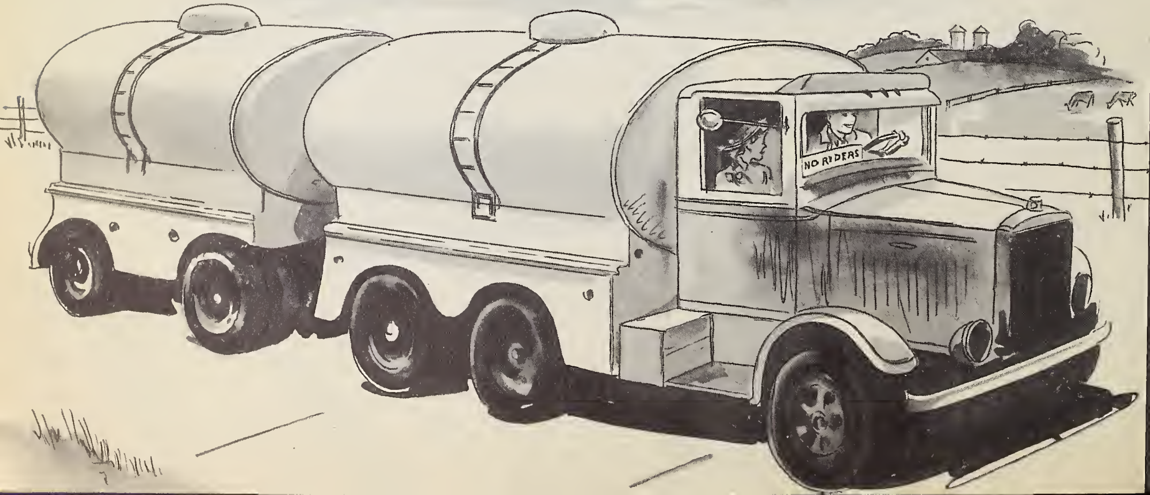
The Hill family doesn't like complaints. So everyone at the farm works hard to keep the pasture free of weeds. Mr. Hill plants a special kind of grass there.

When she had finished her work in the barn, Patty said good-by to Blossom. "I won't be gone long," she said. She hurried to the house and ate a good breakfast. She packed her suitcase and put on her second-best dress. She was ready to go when Uncle Al drove up in the truck.

The milk truck that Uncle Al drove was nothing at all like the farm truck or most other trucks. In the front was the driver's cab. Then came two tanks. They were big and white and oddly shaped. Uncle Al called them thermos bottles on wheels.

Perhaps your mother has a thermos bottle. Perhaps you know it is a

Uncle Al's milk truck



bottle within a bottle. The outer one is airtight; that is, no air can get into it. The thermos bottle has a special kind of stopper. Anything poured into the inner bottle stays for a long time just as hot or as cold as it was when it was poured in. That means, at the same temperature.

Each tank on the milk truck is like that—one tank within another. The outer tank is airtight. The inner one has a cover that is airtight. Milk poured into the inner tank stays at the same temperature as when it was poured in. You see why Uncle Al called it a thermos bottle on wheels.

Honk! Honk!

Patty hurried to the door when she heard the truck in the driveway. She said good-by to her mother and ran out to the truck.

"Step into your carriage, Princess," said Uncle Al, as he opened the door of the cab. He took off his hat and swung it low to the ground, as if he were a prince in a fairy story, and Patty a real princess, and the cab of the truck a fine carriage.

Patty giggled. She didn't feel the least bit like a princess. She felt like a little farm girl who was about to take an exciting trip to the city.

"Good-by, Mother!" she called again. And they were off.

The truck sped down the highway toward Little Town. Uncle Al drove slowly through the streets and around the pretty little square. Out of town he stepped on the gas again.

He drove carefully. He had to watch for the many cars and trucks which were also on the highways. But Patty didn't have to watch for anything. Sometimes she looked out of the window and talked about the interesting things along the way. And sometimes she just talked.

"Do you have more stops to make?" she asked after a while.

"Just one more," Uncle Al said. "Then the thermos bottles won't hold any more milk."

## *At the City Dairy*

At last Uncle Al turned into the driveway of the dairy. "Now I'll show you the sights," he said. "The manager wants you to see everything. He thinks you may run a big dairy farm of your own some time."

Patty looked around to see what was going on. She saw that a pipe had been attached to one of the inner tanks of the truck. "The milk flows through that pipe into another big tank," Uncle Al explained. "The other tank is inside the building. From there the milk runs into the pasteurizing machine. Let's go in and see how the pasteurizing is done."

In the pasteurizing machine, the milk is heated until it is almost ready to boil. Heating milk almost to the boiling point kills any germs that might be in it. Germs do get into milk, in spite of all the care that farmers and dairymen take. Milk that has not been pasteurized is usually not safe to drink.

For exactly half an hour the milk was kept in the pasteurizing machine. Then it flowed out into a cooling pipe. From the cooling pipe it flowed into bottles.

"Goodness!" exclaimed Patty when she saw all the bottles. "I should think it would take a long time to wash all of them!"

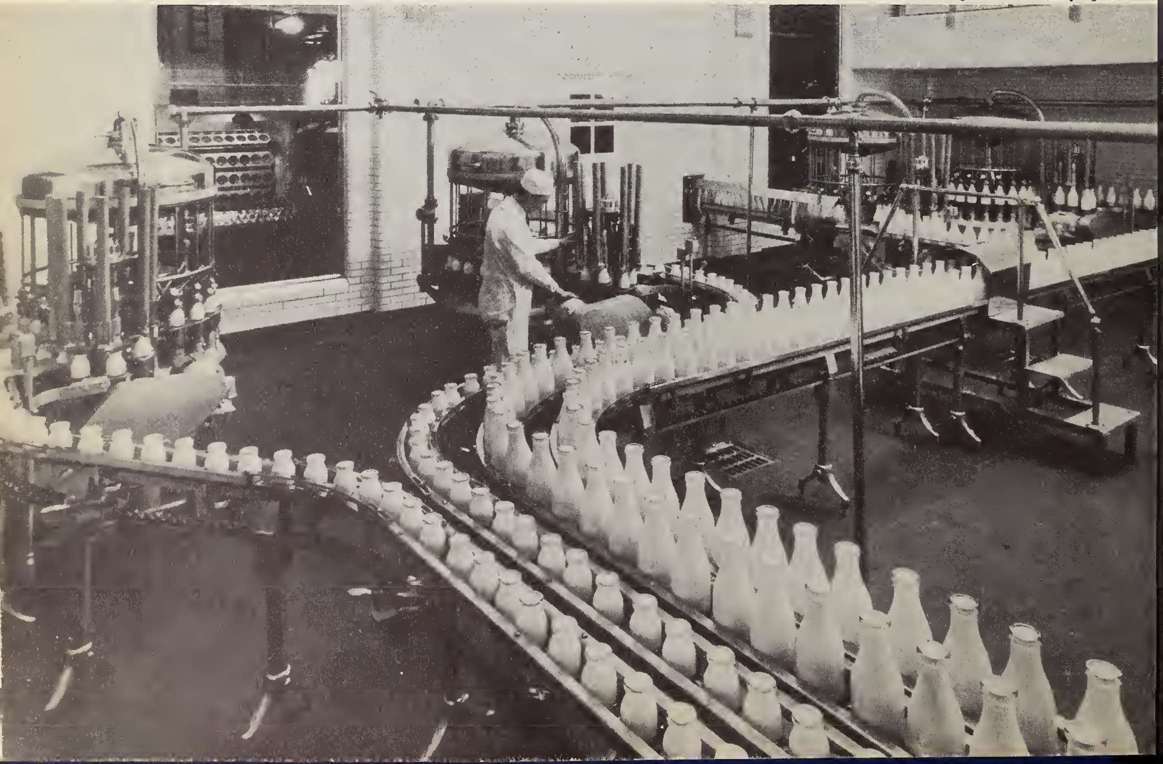
"It would," said Uncle Al, "if the work had to be done by hand. Then, as likely as not, the bottles wouldn't be quite clean. They are all washed in a machine—washed and scalded in hot water so that there isn't a germ alive when the washing is done."

Now the bottles stood on a moving platform. They sparkled in the light that came through the tall windows.

As the platform moved, each bottle in turn was brought directly under the pipe in which the milk had been cooling. Each one in turn was filled. Each one in turn moved on to a capping machine which put a cap on the bottle, very neatly and quickly. Then they were all carried by the moving platform to a cooling room. And there they stayed until they were taken to the milk trucks for delivery.

Just think what a long time it would take one man to fill all those bottles by hand!

*Courtesy The Borden Company*



"I'll take you to an extra-special department," Uncle Al said, and he led the way to another part of the dairy. Here rich chocolate sirup was added to the pasteurized milk.

One of the workmen called to Uncle Al and Uncle Al called back, "Yes, two of them."

Patty didn't know what he meant until the man brought a little tray. On it were two bottles of cold chocolate milk and two straws wrapped in paper. "For you," said the man.

"Oh, thank you!" said Patty. "Um-m!" she said. "It's so good!"

Uncle Al and Patty went outside. Here men were loading boxes of bottled milk into trucks painted white inside and outside.

"From this dairy to the doorstep of every home in the city," Uncle Al said. "Well," he went on, "maybe some people here buy milk from other dairies, but I'm sure that we have the best milk." You can see how proud he was of the dairy.

"Some of the milk goes to the grocery stores and markets," Uncle Al explained. "It will be kept cold and good in their refrigerators. Some of it is for the evening delivery. You may have some of it for your supper."

"Maybe I'll be drinking some of the milk that came from our own farm," Patty said.

"Maybe," said Uncle Al. "But you can never be sure about that."

## *Some Dairy Products*

You know, of course, that there are other good dairy products besides milk and butter. Cheese is one of these products. Evaporated milk is another. Malted milk is another. And powdered milk is another. Perhaps you can think of still others.

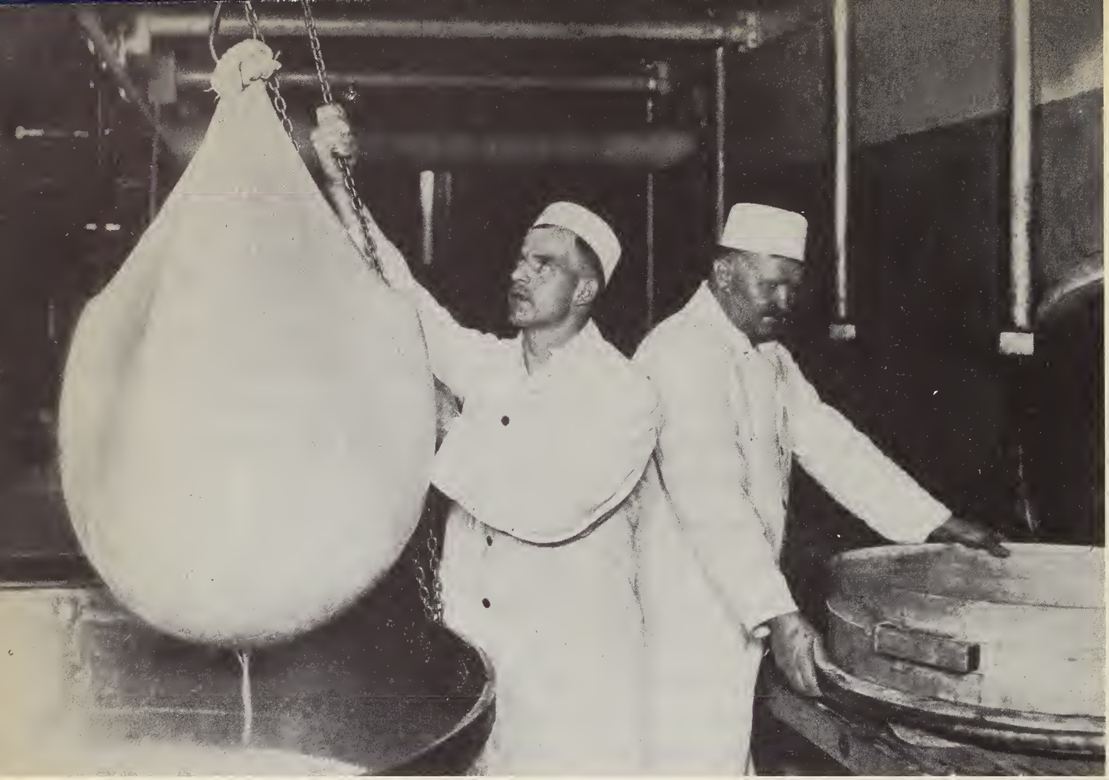
To understand how some of these products are made, you must know that the greater part of milk is water. Just water. The rest of the milk is food of one kind or another. In making most dairy products, the food part of milk is separated from the part that is water. That is done in different ways in the making of different kinds of products.

Cheese is made in a special factory. First, the milk must be soured. Sometimes it is allowed to stand until it gets sour. Sometimes acids are added to hasten the souring.

The sour milk is heated slowly in big kettles. As it heats, the food part of the milk separates from the part that is water. The food part is called curd. The watery part is called whey. You remember the Mother Goose rhyme,

"Little Miss Muffet
Sat on a tuffet
Eating her curds and whey."

The curd is lifted out, still dripping with water, and is put into a cheese press. There it is squeezed



Ewing Galloway

One man is lifting the curd out of the whey. Into what shape will this cheese be pressed?

and squeezed and pressed and pressed until nearly all the water has been pressed out.

There are several different kinds of presses. Some shape the curd into great round cakes. Some shape it into bricks, some into balls. Have you seen cheese in such shapes?

The cakes or balls or bricks of cheese are put into cool, clean storage places. They are allowed to stay there for weeks, perhaps for months. That is what cheese makers call aging the cheese. Very fresh cheese doesn't have much taste. Aged cheese has a much better and stronger flavor.

Evaporated milk is made in a different kind of factory. The milk is put into enormous kettles and some sugar is added. As the mixture is heated, the watery part leaves the kettle in the form of vapor.

Have you ever watched your mother's teakettle bubble and boil? If you have, you have seen how part of the water passes into the air in clouds of vapor.

The same thing happens when milk is heated. Part of the water in the milk passes off in the form of vapor. By and by not much water is left in the milk, but the food part is still there and is heavy and thick. It is sealed in cans that are labeled

EVAPORATED MILK

It will keep fresh and good until the can is opened. Even after it has been opened, the evaporated milk will stay fresh if it is kept in a refrigerator.

About five quarts of fresh milk are used to make one quart of evaporated milk. When people wish to drink it, they add water. Then they have milk that is much like the whole milk as it comes from the dairy.

Think what a wonderful food evaporated milk is! Especially for people who live miles and miles away from a dairy farm and who have no cows of their own. It is good to take on camping trips and on picnics. It is good to use in cooking and baking.

To make malted milk, wheat flour and barley and water are mixed into a mash. This is stirred into the milk. The mixture is put into a big kettle, which stands over a hot flame.

The mixture is heated until all the water evaporates. What is left is a fine powder. Sometimes the powder is pressed into small cakes. Sometimes it is put into jars just as it is. Either way it is used to make a delicious drink—malted milk. Usually you can buy malted milk at a soda fountain. You can get it in different flavors—chocolate, strawberry, vanilla, orange, and others.

Bring different dairy products to class. If you have any way of cooking in your school, you might plan a little party and serve dairy products. It would not be difficult to do, because most of these products are so easy to use or to prepare for use.

## *Little Town's Creamery*

Not all the dairy farmers sell their milk to the city dairies. Not all the farmers around Little Town send their milk to the city dairy you have been reading about. Many of them sell milk to butter factories or creameries. Butter, you know, is almost as important as milk.

Little Town has a fine creamery. It stands at the edge of town. It is painted white, and green grass grows all around. Everything about the creamery is as clean as a new pin.

Most people of Little Town are still asleep when the doors of the creamery are opened. The men who work there take turns coming early. Everything must be ready when the farmers drive in with milk or cream from their dairies. Often, before the

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town clock has struck six, a farmer's truck comes rumbling into the driveway with several cans of cream.

The farmer had to milk his cows early to be at the dairy before six. He poured the fresh, warm milk into a machine called a separator.

The separator has a large bowl at the top, into which the fresh milk is poured. The milk flows slowly into another part of the separator, where it is whirled around. This whirling separates the cream from the milk. The cream runs out of a spout into a can. The skim milk runs out of a lower spout into another can. Now the cream is ready for the creamery.

Now, at the creamery, one of the workers weighs the cream that the farmer brought. He takes a sample from each of the cans and puts each sample into a small bottle. He pours a little acid into the bottles and puts them into a tester.

Cream for butter and skim milk for the pigs.

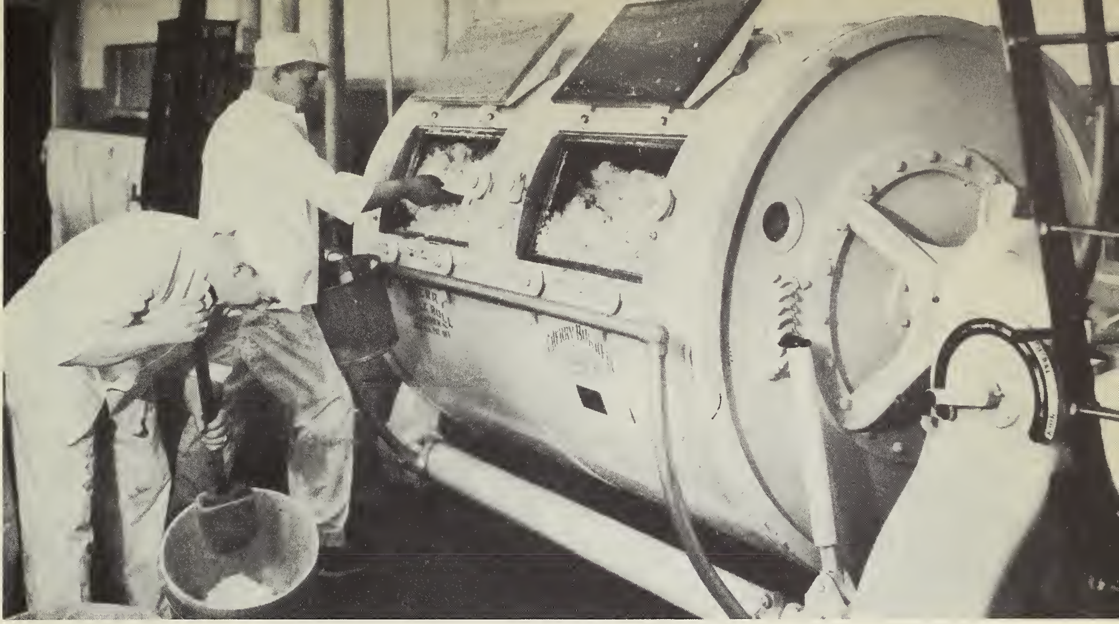
*Kaufmann & Fabry Company*

The tester whirls round and round. By and by it will show how much butterfat there is in the cream. This is another way of saying how rich the cream is.

The man examines the cream in the little bottles. "Extra rich!" he says. "We'll pay top price for this." By weighing and testing, the men at the creamery know just how much to pay each farmer.

Some farmers bring whole milk to the creamery. There it is poured into a separator much like the one the farmer uses, only larger. Out of one spout comes the cream, which is used in the creamery to make butter. Out of another spout comes the skim milk, which the farmer will take home to feed to his pigs and calves. He may feed some of it to the chickens. The meat of milk-fed chickens is extra good and tender.

When all the cream has been tested, it is poured into a large tank. That tank is part of the butter-making machine. It is something like a barrel turned on its side. It has an opening over which a cover fits tightly. Inside are big paddles which splash and dash and churn the cream about. The tank is really a big churn.



Ewing Galloway

The big churn is stopped so the men can see if the butter has been churned enough.

As the churning goes on, the butterfat separates from the rest of the cream. What remains is buttermilk, which some people like to drink.

The buttermilk is drawn off, and the butter is washed and salted. It is put into a machine which packs it into pound packages and wraps each pound in a special kind of paper.

The pound packages are passed on to another part of the machine, which wraps each one in a cardboard wrapper. On each one is stamped

LITTLE TOWN BUTTER
SWEET BUTTER—NONE BETTER

The packages are stored in a refrigerator where the butter becomes hard and firm. Then it is ready to be sent away to market.

At many creameries the cream is allowed to sour before it is put into the big churn. If it doesn't sour quickly, an acid is added to hasten the souring. Sour cream makes good butter, too.

The manager of the creamery buys only good milk and cream. Every once in a while he sends an inspector to visit the dairy farms from which he buys. The inspector makes sure that all the cows giving milk are kept clean and are in good health. He makes sure that everything about the dairy barns is clean.

All the workers at the creamery must be clean about their clothing and about the work they do. They are proud of the butter they make. They say there is "none better."

Baking bread long ago

# DAILY BREAD

## *Old Ways and New Ways*

Patty stayed in the city for almost a week. Aunt Alice took her downtown to several department stores and to a movie. Uncle Al took her to the parks and to the zoo, which is in one of the parks. It was all very wonderful and exciting. Still, Patty thought she liked living on a farm better than living in a large city.

On the last day of her visit she stood by the window watching the busses, the automobiles, the delivery trucks, as they rolled swiftly along the smooth street. All at once she heard Aunt Alice call. Patty ran out to the kitchen.

"Patty," said Aunt Alice, "will you go to the store and get a loaf of bread? I forgot to order it when I ordered the rest of the groceries."

"Yes, Aunt Alice," said Patty.

"You know the way, don't you, dear?" Aunt Alice asked. "Go two blocks down the street. Then turn to the right and go another block. The grocery is on the corner. And do be careful when you cross the street."

"Yes, Aunt Alice," said Patty. "I know the way and I will be careful."

She took the money Aunt Alice gave her and went skipping down the street. Soon she was back with a big loaf of freshly baked bread which was sliced and wrapped in waxed paper.

"Thank you, dear," Aunt Alice said. "We need that bread for dinner." She laughed. "Your Uncle Al is always teasing me about forgetting to order bread. He says I'm still a farm girl, even if I have lived in the city for years. We baked our own bread at home, you know. And Uncle Al says I'll never get used to ordering bread from the grocer."

"But we often buy bread," Patty said. "And we live on a farm. Sometimes we buy at Little Town stores, sometimes from the bread truck that runs past our house. Mother doesn't bake all the bread we eat."

"I know," said Aunt Alice. "But when I was a little girl on the farm Mother baked all our bread. Every bit of it. There were no bread trucks running past our door. We hardly ever bought bread in Little Town. Father raised the wheat of which our flour was made. Now no one knows where the flour comes from."

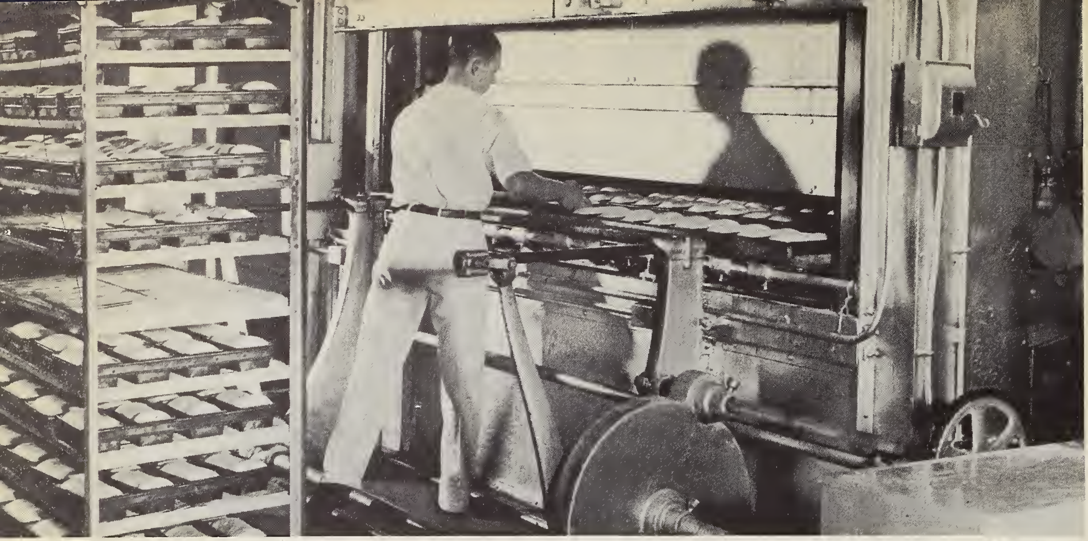
"Does that make any difference?" asked Patty.

"Of course not," said Aunt Alice. "Good wheat is raised in many parts of our land. Good wheat makes good flour, no matter where it comes from. I was only saying that our ways of doing things have changed. Most people now buy all their bread. It's even sliced at most of the bakeries. The bakeries are like factories."

All that Aunt Alice said is perfectly true. Most of the bread that people eat now comes from bakeries that are like factories. The mixing, the baking, and the slicing are all done by machinery.

Flour is mixed with water, a little salt, a little sugar, and some shortening, or fat. Yeast is put in to make the mixture light. After the dough has had time to rise, it is kneaded. It is pressed this way and that way, turned over, and pressed this way and that way again.

The dough is cut into loaves and put into pans. The pans are placed in a very long heated oven. The dough bakes into bread as the pans move slowly along. Out of the other end of the oven come nicely browned loaves. When cool, each loaf is sliced and wrapped in waxed paper.



Ewing Galloway

The pans of dough move back into the oven to make room for more pans.

All this work is done by machines. Men who work in bakeries take care of the machines, but they do not touch the bread with their hands.

Men who own or manage bakeries buy flour from mills. Men who own or manage mills buy wheat from elevators. Men who own or manage elevators buy wheat from farmers all over our land.

At one time each little town had a mill of its own. Little Town's mill stood on the bank of the stream that runs through the town. The outside of the mill was gray because it had never been painted. Inside it was white, not with paint, but with the dusty, powdery flour that had settled there year after year.

The grinding machine of the mill was run by water power. That is, the power to turn the machinery came from the swiftly flowing waters of the river. A big wheel had been set in such a way that the water pushed against it and made it turn. Round and round, round and round, the wheel turned the grinding machine, which ground the wheat into flour.

From the grinding machine the wheat ran into a sifter, which took out the husks. These were called bran and were used to make muffins and bread and other good things. They are still called bran and they are still used to make good things. Many breakfast foods are made of bran.

The flour that was left after the sifting was soft and fine and white. Now it was ready to be put into bags or barrels.

In the days when the old flour mill stood on the river bank, farmers took their wheat there to have it ground.

The miller kept part of the grain as pay for the grinding. That part was his own and he could do as he liked with it.

Usually the miller ground his own wheat, too. He sold the flour to the grocers, and the grocers sold it to the people who didn't raise wheat. Sometimes the miller bought all the wheat a farmer had raised. He ground it and sold the flour to grocers. With all his grinding and buying and selling, he made a good living.

The flour mill of Little Town is gone now. So are nearly all the other old mills that once were so busy. Why have they disappeared?

It is because better and faster ways of grinding grains have been found. Now electric power and steam power and gas power are used to run the machinery that grinds the grain. Now nearly all the mills are in large cities.

Several cities of our country are famous for their large mills. One city has the largest mills in the whole world. Perhaps you can learn the name of that city and find it on your schoolroom globe.

Do the owners of these big mills buy wheat directly from the farmers? No. The farmers take their wheat to the nearest elevator and sell it there. The wheat is stored in the elevator until it is sold again.

One day a freight car is run to the elevator on a sidetrack. The car is to be loaded with wheat. The loading of wheat is not done by hand. The wheat simply slides down a long spout from the elevator into the car. When the car is loaded it stands on the sidetrack waiting.

Soon that freight car will be attached to a long train of freight cars. Clickety-clack! Away the train will go over shining steel tracks. Away and away—perhaps for hundreds of miles. Finally that carload of wheat will be brought to another elevator.

This elevator is many times larger than the one at Little Town or those at other small towns. It holds hundreds of carloads of wheat. Machinery does the work in the elevator. A machine draws the wheat out of the car. Who-o-sh! The wheat is drawn up in much the same way that dust is drawn from a carpet by a vacuum cleaner. Owners of big mills come to the elevator to buy. They may buy one carload or many carloads.

Wheat is raised in nearly all parts of our land. Some of it comes from large ranches near the middle of our country, where it is a most important crop. Some of it comes from the northwest, where it is also an important crop.

Much of the wheat comes from big farms and middle-sized farms and little farms in the East, in the West, and in the North. Very little wheat comes from the far South, because

John

that part of our country is too warm to raise good wheat.

In some parts of our land wheat is planted in the fall. By the time cold weather comes, the young plants have covered the fields and made them like green, grassy meadows.

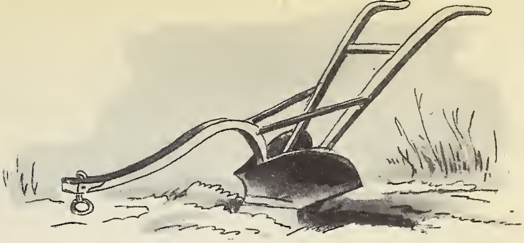
Before the winter is over, the wheat may look dead and brown. Yet the roots are not dead. Warm spring rains will make the roots send out fresh shoots which will soon cover the ground like a soft green blanket. Wheat that is planted in the fall to stay in the ground all winter is called winter wheat.

In colder parts of our land winter wheat does not grow well. There seeds are planted in the spring. Such wheat is called spring wheat.

No matter at what time the farmer plants his wheat, he has to prepare the ground carefully if he wants a good crop. First, he must break up the ground by plowing it. To do this, he may use a horse-drawn plow. Or he may use a tractor.

After he has plowed the ground, he must harrow it, not once, but several times. The soil must be soft and fine like powder. Finally, the seeds are planted with a seeder or drill.

When the farmer has sown the seed, he has no more work in the wheat field until harvest time. Then he has plenty of hard work, as you will see when you read the next story.



Turn back and read about the plowing in "Little Farm." If you live on a farm, tell how the plowing is done there. If you have never seen plowing done, ask questions about it. Talk about it in class. You will enjoy bringing flower pots to school and planting some wheat. Be sure the soil is loose and fine.

# *Bobby and the Wheat Harvest*

Bobby stood at the edge of the wheat fields and blinked at the bright sunshine. It was hot, hot, hot. He could feel the sun reaching through his thin shirt. He could feel the sun on his bare legs. He wriggled as if he were trying to get away from the heat. He couldn't. Heat was all around him, everywhere.

"Hot, bright days are just right for the wheat harvest," Father had said that morning. "I hope we have this kind of weather long enough to get our whole crop cut."

Bobby wasn't very old. But he knew a great deal about farming, especially about wheat farming. He knew how important the crop was. He knew that if heavy rains should come the harvest would be put off. If the harvest was put off too long, the wheat would become overripe. Overripe wheat shatters in the cutting, and so much of it is lost.

If there should be a hard windstorm, part of the precious wheat would be blown to the ground. Then the cutting would be very difficult. Besides, when wheat has been beaten down, some of it is lost.

A hailstorm would be worse than wind or rain. Hail knocks the heads of the wheat from the stalks and beats them to the ground. Even into the ground. Bobby often had heard his father tell of good crops that were lost because of bad weather.

Losing their crops, or even part of them, is very bad for farmers. If they have little or nothing to sell, they have little or no money with which to buy the things they need but cannot raise on their farms.

Bobby looked up at the sky. There was not a cloud to be seen in the blue. The wind, though very, very hot, was gentle. It would not bring rain or storm, Bobby thought. Besides, the weather report had come over the radio, "Fair and warmer."

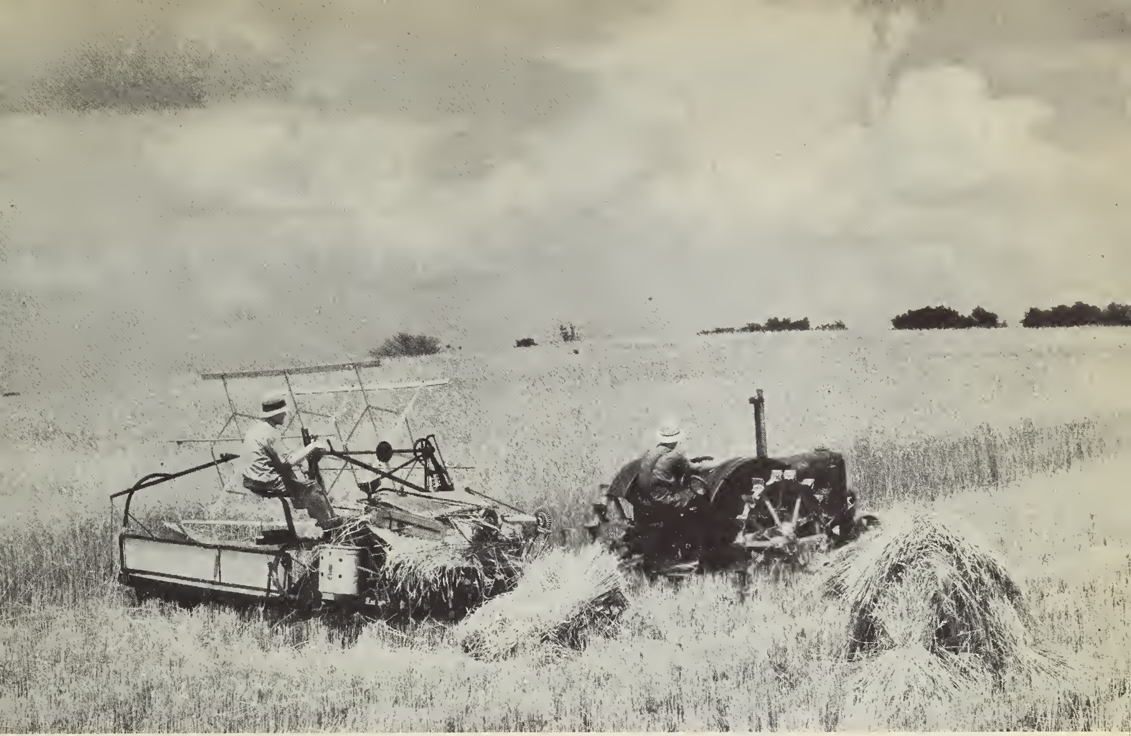
Bobby looked out over the fields again. The wind rippled the ripened grain into waves. "Like a yellow sea," Father had said. Like a yellow sea! Bobby had never seen the sea, really. Only in the movies. Still, he could understand what Father meant.

A fine day for the harvest. Good! And yet Bobby did not feel happy. He thought there was nothing he could do to help with the harvesting; that is, nothing important. He could run errands and carry water to the men in the fields. And he could help Mother in the house. But things like that were not important, and they certainly were not any fun.

Brother Bill was going to run the tractor that pulled the binder that cut the wheat. That was really something. Bill was older than Bobby. He always got to do the things that were important, Bobby thought. But Bobby had to do what the others told him to do. Even Brother Bill often thought of things for him to do.

In the distance Bobby could see Bill bringing the tractor around the field. His father was sitting on the binder, working the machinery, watching carefully to see that everything was all right.

Slowly the tractor and the binder came toward Bobby. He could see Bill sitting there, proud as a king. "I could run that tractor, too," Bobby thought. "I could if Father would give me a few lessons in driving. But, no, I am too little. It's always that way." Bobby turned and walked slowly toward the house. He could



Courtesy J. I. Case Co.

The binder cuts the wheat and ties it with string. Do you see the long cutting blades?

not bear to stand there and watch Brother Bill driving that tractor.

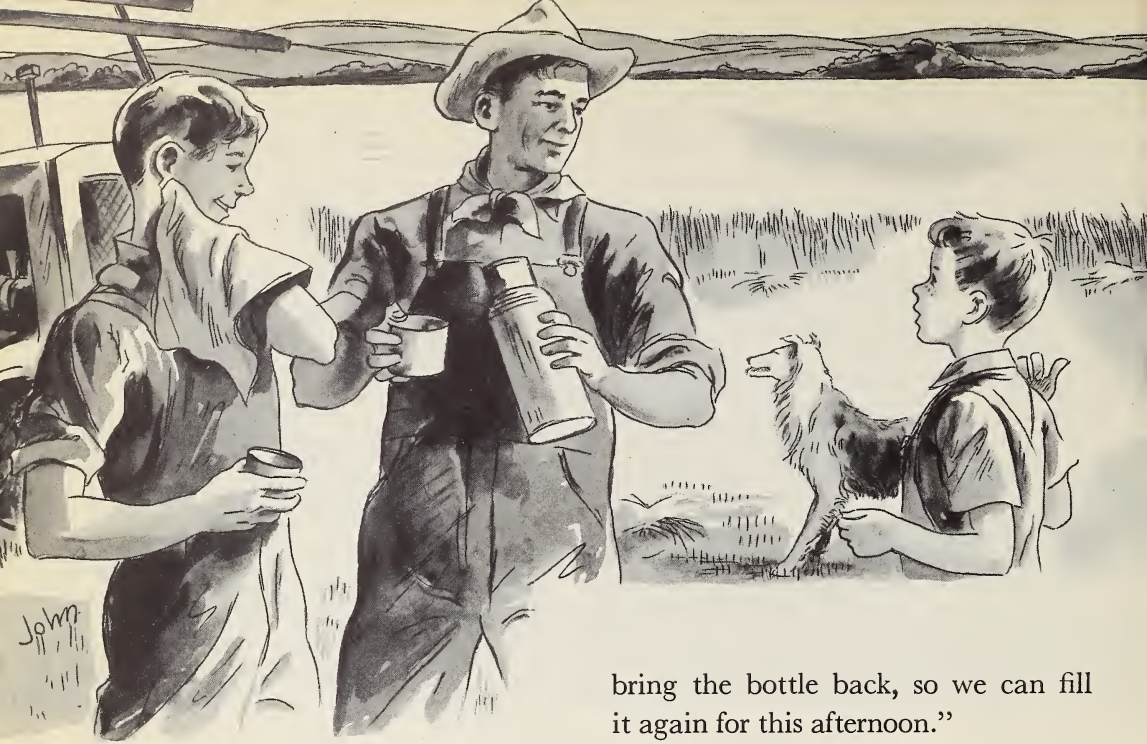
He stopped to look at the new barn. It was a fine, big barn, painted red. It looked splendid in the bright sunshine. People said that they could see it miles away.

The house was small and brown. It sat close to the ground, so close that it looked almost as if it had grown out of the ground. People in Bobby's part of the country set their houses close to the ground because of the windstorms.

On the north and west sides of the house were tall trees. Cottonwoods and maples. They had been planted there to break the wind and to protect the house against the fierce windstorms. Nearly all the houses Bobby knew had such windbreaks.

He went into the kitchen. Mother was putting bread into the oven of the new electric range. He stopped to watch—at a good, safe distance. Mother was always saying, "Keep away from the range, dear." She was afraid he would turn some of the knobs that shouldn't be turned.

Electricity was new in the country homes in Bobby's part of the world. He could remember when the house had been lighted with oil lamps. He could remember the wood-burning



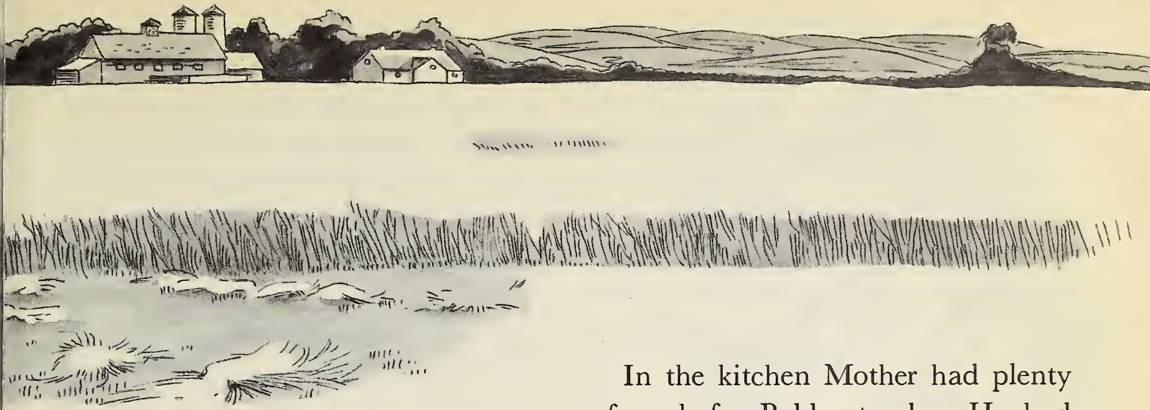
range that had stood in the kitchen. It made the kitchen a cozy place in winter. But in summer that room was as hot as a furnace. Almost.

Mother was glad that she could cook with electricity. And Bobby was glad, too. Now he didn't have to carry wood to keep the fire going. That old range was like a fiery dragon that ate wood and more wood and never, never seemed to have enough.

Mother glanced at the electric clock. "Come, Bobby. It's time you were taking water to Dad and Bill," she said. "The water they took out in the thermos bottle this morning will be gone by this time. Be sure to bring the bottle back, so we can fill it again for this afternoon."

"As you come back," Mother went on, "look to see if the turkeys are penned up in their yard. Father said I could turn them into the field as soon as the wheat is cut. But we'll have to keep them penned safely in their yard until then. If they should get into the way of the binder, you know they would be hurt. They might even be killed."

Bobby sighed. Still more errands. Turkeys were silly birds, he thought. They would run away if the gate was left open for just a few minutes. Soon he and Major, the dog, would have the job of watching the turkeys as they stuffed themselves with the wheat that lay scattered all over the ground after the reaping.



Time off for a cool drink

He carried the water to the field. He stood by while Bill and Father drank the water and rested a little. "May I go over to Jim's this afternoon?" he asked his father.

Jim's father had a new combine, and Bobby wanted to see how it worked. A combine is a machine that cuts the heads right off the wheat and leaves the stalks standing. It threshes the wheat from the heads and separates the grain from the husks or chaff. It pours the grain into bags, all ready to be taken to the elevator. It is a wonderful machine.

"This afternoon?" Father said, and he looked very much surprised. "Son, don't you know that this is harvest time and that every man of us is needed? Sorry, but you'll have to be on the job."

Bill looked at Bobby and grinned. Bobby turned and almost ran toward the house. Needed for what? That's what Bobby wanted to know.

In the kitchen Mother had plenty of work for Bobby to do. He had to clean the vegetables she had just brought from the garden. He had to peel the potatoes. He had to wash the lettuce. He had to wipe the big baking bowls. Yes, and he even had to set the table for dinner. Girls' work, that's what it was!

He looked angrily at his baby sister, sitting in her play pen and chattering baby talk. "Why don't you hurry and grow up so you can help with the work?" he asked. But not aloud. Mother wouldn't like that.

Just then the baby gave him a big smile, such a wide smile with a squeal thrown in that Bobby had to laugh.

After dinner everyone rested for a while. Bobby wandered outdoors with Major, but it was too hot to play. He sat in the shade of the windbreak and wished he were grown up.

Later in the afternoon Mother called. "It's time to take another cold drink to Father and Bill," she said. "And here's a special treat for them." She brought a bag of oranges from the refrigerator. Nice, big, cool

Something had been written on the paper

oranges, full of sweet juice. "One for you, dear," she added.

Bobby took the cool orange with a "Thank you, Mother." It was wrapped in tissue paper. He took off the paper and saw with surprise that something was written on it.

SAM ADAMS
wrapped this orange

The writing was not very even. It looked as if the letter *w* had been put on after the rest of the word had been written. Bobby showed the paper to Mother. "A little boy must have written that," she said. "He almost forgot how to spell wrapped."

As Bobby walked through the wheat stubble, sucking his orange, he wondered about Sam Adams. He wondered about the part of the United States where oranges grow. That part of the country was warmer than his part. He knew that much. "But how can it be warmer than it is here?" he wondered. "Can any place be hotter than this field right now?"

Father had once explained. "The great difference between the wheat lands and the orange lands," he had said, "is in the length of the seasons and the coldness of the winters. In orange lands, spring comes early after a mild winter. It comes while our fields are still covered with snow. And winters in orange lands are nothing like the winters we know. There are no snowstorms, no blizzards in those warm lands."

No blizzards! Bobby wriggled in the heat. A blizzard would feel good now. No-o-o-o, not even now. Blizzards blew so furiously that they kept people indoors for days. They filled the roads with snow so deep that it took many men several days to shovel them out. The mailman could not make his rounds, and Bobby and his family really felt shut off from the rest of the world.

Still wondering about orange lands, Bobby walked through the blazing sunshine. At last he came to the place where the tractor would make the next turn in the big field.

Father and Bill took the cold drink and fruit gratefully. They mopped their faces with the clean handkerchiefs Mother had sent. "Whew! What a day!" Father said, as he slowly ate his sweet, juicy orange. "Still, it's good for the harvest."

Bobby walked slowly to the barn. There was nothing he wanted to do. He went to the swing that hung from one of the maple trees. He began to swing, slowly at first, then faster. Swinging was cool. He swung so high that he could see the turkey yard.

Suddenly he stared in astonishment. He swung up again and looked once more. Then he ran to the turkey yard. Not a turkey in sight! Not one turkey! Someone had opened the gate and left it open. Major, of course! He could unfasten the gate, but he couldn't close it. Now the turkeys were gone. Now Bobby and Major would have to go after them.

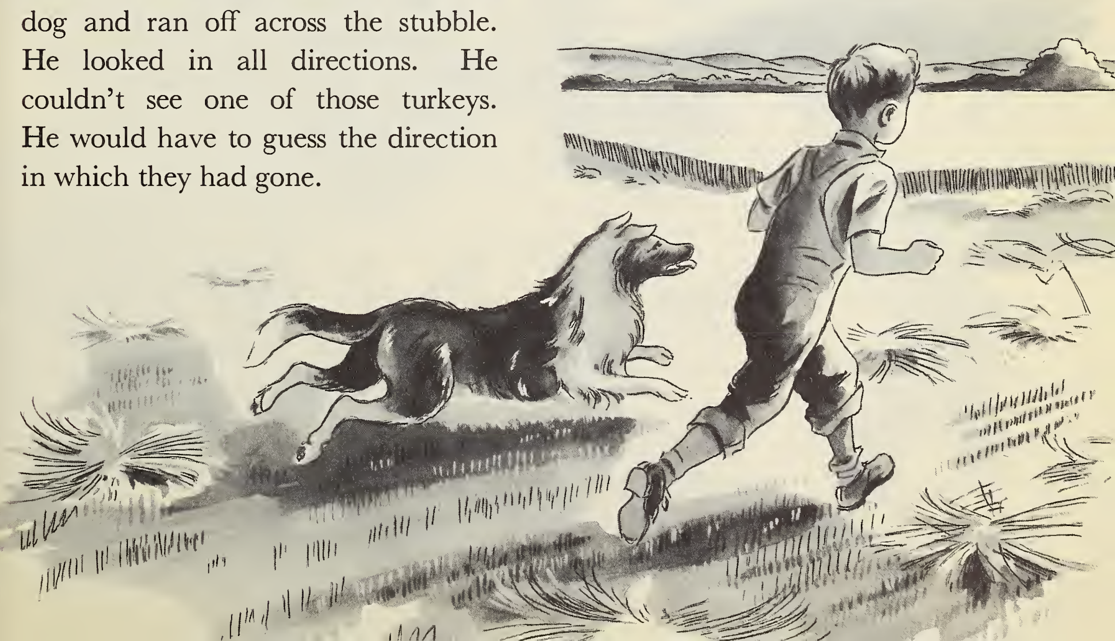
Without stopping to tell his mother where he was going, Bobby called the dog and ran off across the stubble. He looked in all directions. He couldn't see one of those turkeys. He would have to guess the direction in which they had gone.

He went a little way east, then a little way north, then a little way south, then a little way west. Zigzag across the fields he went, looking in all directions. Major followed panting at his heels.

Zigzag across the fields went their shadows, stretching long in front of them. For now the sun was low in the west. Now and then Bobby threw his arms over his head, or stretched them out at his sides. It was fun to watch his long shadow doing just what he did. But he couldn't spend time playing.

By and by the sun slipped behind a little row of far-away hills. Then there were no more shadows. The world looked strangely different, and Bobby felt rather lonely.

They started off across the stubble



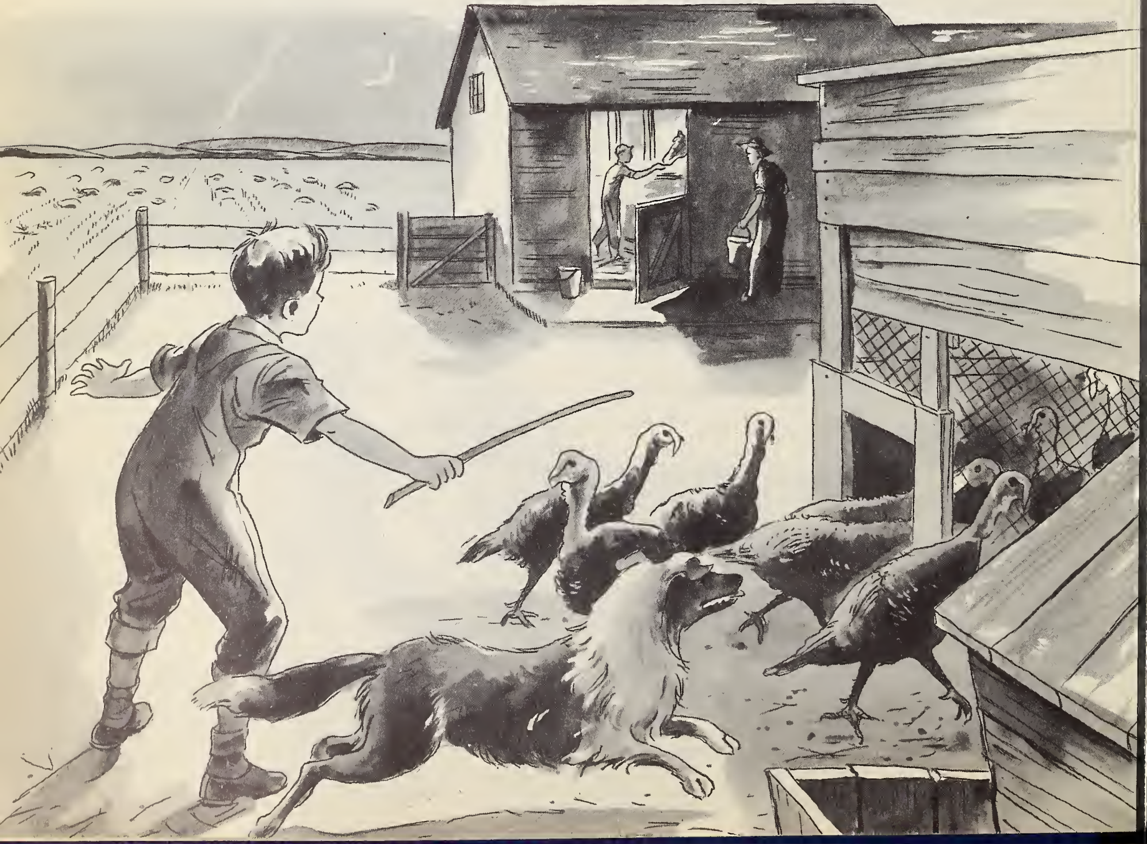
Suddenly he heard a whirring sound. He looked up and saw the lights of a large air liner speeding toward the east. He stopped for a moment to watch the flickering lights of the plane. It was all alone in the sky, just as he seemed to be all alone in the world. But he couldn't spend time watching the air liner, either. Night was coming on.

At last, in the distance, he could hear the turkeys. "Gobble! Gobble!" They were running around rather foolishly, as if they were trying to find shelter for the night. "Come, Major," called Bobby, and together they rounded up the flock.

By that time it was quite dark. The silvery slice of moon and the twinkling stars gave scarcely any light. Everything was quiet, as if the world was resting and getting ready for another new day. The way home was long and lonely.

Mother was standing in the kitchen door when Bobby and Major brought the turkeys to the farmyard. Bobby could see her clearly in the brightness under the electric light that swung from the ceiling.

Father and Bill had just finished the evening chores. Bobby suddenly stood still. He had forgotten about the chores. Would Father scold?



Bill helped drive the turkeys inside. Father closed the gate of the turkey yard carefully, but he didn't say anything. Bobby's throat hurt. He was frightened. He had done the best he could, but just suppose he had done wrong. Perhaps he should have asked Mother what to do.

"Bobby," said Father.

"Here it comes," thought Bobby. "I'm going to get scolded."

"You're a good boy, Bobby," Father said. "At first I thought you had gone to Jim's house. But then I knew you wouldn't do that after I had said we couldn't spare you. When I saw that the turkeys were gone, I knew what had happened."

Bobby grinned, but he couldn't think of a thing to say.

"Rounding up those turkeys was a hard job," Father went on. "It was important, too. Mother has been depending on her turkey crop."

Bobby grinned some more.

"A lot of folks will be glad that you went after those birds," Father went on again. "They'll be glad when they sit down to a good Thanksgiving or Christmas dinner. They won't know that you and your mother worked hard to raise the biggest part of that dinner. Still, they'll know that somebody worked to do it.

"We raise food for other people—people we'll never see or know about. But then many other people raise food for us. That's the way it is all over our country. That's the way it is all over the world. And that's why it is so necessary for everyone to do his work well."

Suddenly Bobby understood just how important he was to the family. To other people in the world, too. People he would never see, never know about. He felt good inside.

Have you ever done anything to help raise food for other people? If you have, tell about it.

## *Other Grains*

Wheat is the most important grain crop raised in our country, although other grains are raised, too. Among these are oats.

Farmers raise oats in much the same way that they raise wheat. Oats are planted in the spring in the north and in the fall in the south. The harvesting of the crop is much like the harvesting of wheat.

Only a very small part of the oats raised in our country is made into food for people. Oatmeal is one of these foods. Most of the oats are raised to feed animals.

Philip Gendreau

Sometimes the corn is set up in rows of shocks after it has been cut.

Rice is another grain crop. Raising rice is different from raising wheat or oats, because rice is a very thirsty plant. The fields have to be flooded while the young plants are growing. The water is drained off before harvest time, however.

Corn is more important in our country than either oats or rice. It is raised as a food for people and animals, though animals eat more of it than people do.

Corn is planted in late spring after the danger of frost is over. The ground is plowed and harrowed, and the seed is planted in rows. Corn must be cultivated, that is, hoed or plowed, many times. Cultivating keeps the soil loose and free of weeds.

When the corn plants have grown tall, they don't need any more cultivating. They shade the ground so well that weeds cannot grow. And they have long roots that take moisture from the ground.

Corn is harvested in a number of ways. Where the fields are large and level, a machine called a corn picker is used. The corn picker does just what you think it might do. It takes the ears from the stalks and drops them into a bin or box which is a part of the machine.

Some farmers use a corn binder to harvest the crop. This machine cuts the stalks and ties them into bundles. Men follow the binder and set the bundles in shocks. The ears are still on the stalks. Later in the fall the bundles are taken down, the ears are pulled from the stalks, and the husks are removed from the ears.

On small farms or in hilly fields farmers cut the corn by hand. They use a big knife called a corn cutter. They cut an armful of stalks at a time and set them on end. They cut more stalks and tie them together in shocks. Later, whenever the farmers have time, the shocks will be taken down and the husking will be done.

Some farmers cut the corn before it is ripe. A machine is used for cutting. It cuts down the stalks. It chops the stalks and the ears all together into small pieces. These are stored in a tall round building called a silo. Corn treated in that way is called ensilage, and most of it is fed to cattle.

*H. Armstrong Roberts*

A silo stores chopped corn and cornstalks.

A corn picker picks the corn and husks it much faster than it could possibly be done by hand.

*Courtesy Minneapolis Moline Power Implement Co.*

# THE ORANGE THAT SAM WRAPPED

The orange that Sam Adams had wrapped traveled a long, long way before it reached Bobby on the wheat ranch on that hot harvest day. It traveled more than a thousand miles. But the journey was made safely and quickly—so safely and quickly that the orange was as round, as firm, and as juicy when Bobby lifted it out of the tissue-paper wrapper as it had been when Sam rolled it in.

It was the very first orange that Sam had ever wrapped, and he did it very carefully. Just so. But when he had finished putting the thin yellow tissue paper around it, he suddenly had a bright idea. He took the tissue paper off again.

From his pocket he took a stubby pencil and wrote:

SAm ADAms
wrapped this orange

Then he put the wrapper on the orange again and put it into the box. "There!" he said, as if something wonderful had been done.

Joe was watching Sam. Joe was the foreman who saw to it that all the other workers in the grove did their work well.

"Hey!" he called. "What's the good of writing on the wrapping paper?" Sam shouldn't be wasting his time even if he was Mr. Adams' son. That's what Joe thought.

Sam grinned a little foolishly. Well, maybe there was no good in writing his name on the paper. Still, he would like to have someone know he had helped with the orange harvest.

It was the very first big crop of oranges that Sam had helped to harvest. It was the very first big crop that his father had had from his grove. There had been some oranges a year ago, and a few the year before that. But orange trees do not bear well until they are six or seven years old. That is a long time to wait for a harvest.

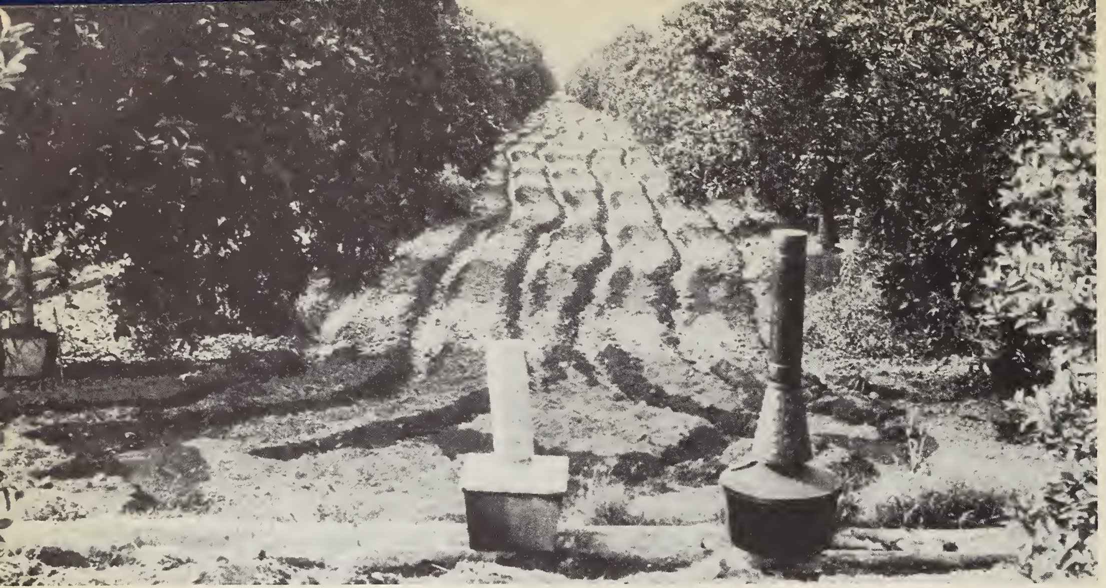
Years of hard work had gone into that orange grove. First, the soil had to be plowed and made smooth. The ground had to be marked so that the trees could be planted in straight rows. Then the trees had to be set out with great care—just so far apart, just so deep in the ground.

After that the soil had to be stirred now and then, so that the roots of the trees could push deep into the ground. When too little rain fell, the trees had to be watered. This was done by running water through the ditches which had been dug through the grove.

That was not all of the work. Sam's father and his workers had to fight insects that like living in orange groves. Some insects eat the shiny leaves of the tree. Some sting the sweet-smelling flowers. If the leaves are eaten, there is nothing to protect the fruit from the scorching sun. If the blossom is eaten or even stung, there will be no orange. Each blossom, you know, is the beginning of an orange.

There are many ways of fighting insects. One of the best ways is to spray the trees with poison. The insects eat the poison and die.

Still you have not heard about all the work of raising oranges. The trees have to be protected against cold. The weather is usually warm where oranges grow. But sometimes it grows cold—quite cold. Oh, never as cold as in the wheat lands where Bobby lives! But cold enough to nip the tender fruit of the trees.



Burton Holmes from Ewing Galloway

Can you tell what the funny little stoves are for? Can you see the ditches for watering?

To protect the trees, orange growers set little stoves in the groves. They are not like the stoves that are used in homes. They are special stoves that burn with a great smoke. The smoke settles like a blanket around the trees, and like a blanket it keeps out Jack Frost.

Years of fighting insects. Years of keeping the trees watered and cultivated. Years of guarding against the sudden cold. Years of working and waiting for a good harvest.

Sam was not much more than a baby when the young trees were set out. Now he was a big boy of nine. It was as if he had grown up along with the orange trees.

The orange tree does not grow very tall. At full growth it is not much more than twenty feet high. The fruit on the lower branches can be easily picked from the ground. Sam thought it would be more fun to pick from a ladder. So up the ladder he went, carrying his big bag.

Sam didn't mind the hot sun. He was used to it. Besides, the shiny leaves of the tree made a pleasant shade. He sniffed the sweet-smelling blossoms. It did not seem strange to him that there were blossoms and ripe fruit and green fruit on the tree all at the same time. That is the nature of the orange tree. The biggest part of the crop ripens at about the same time, however.

Like all the other pickers, Sam emptied his bag into a box. A truck took his box and many others to a large building. There a special kind of machine washed the oranges. And another special kind of machine dried them and polished them.

Sam's father did not own these machines alone. He and several other orange growers owned them together. Each man had paid his share of the money to buy them. Each man had the right to use them. The owners planned the best times to do their work and often helped one another.

Have you ever wondered why the oranges in bags or baskets in the stores are of the same size? It is because they are sorted according to size before being sent to market. A special machine does the sorting.

Sam went with the truck to watch the sorting machine. This is the way it worked: The oranges were placed on a moving platform which was a part of the machine. As the platform moved along, the oranges passed over openings of different sizes. Some openings were small, some middle-sized, some large.

The little oranges dropped quickly through the openings. The middle-sized oranges dropped next. The largest ones moved along the platform and fell, at last, through large openings. They were very special oranges.

Sam watched the machine for a while and then he thought, "I should help with the packing."

Joe showed him how to wrap the oranges, how to put them into the packing boxes. "Your father has already sold this fruit," Joe told Sam. Just as if Sam didn't know! "Your father wants the oranges to get to market in good condition."

Sam knew how important it was to sell good fruit. But he couldn't help wondering about the different people who would buy the oranges. He knew that people in far-away parts of our country would buy them. The oranges would travel by truck, by train, by boat, by automobile, and even, perhaps, by wagon.

Sam wished that someone, just someone in the world, would know that he had helped with the harvest. That is why he had written his own little message on the wrapper. And, when you come to think of it, he wasn't so foolish when he wanted someone to know that he had helped to pack that big orange crop.

Make a list of the fruits that you like to eat. How many of these good fruits are grown in your own community? Check these on your list. Talk about the raising and harvesting of these fruits. Perhaps someone you know can tell you about fruits that come from far-away lands.

Johnny's first ride

# JOHNNY ON A RANCH

## *Range Beef Fattened with Corn*

Sam Adams sat on the porch of his home lazily eating an orange. For days he had been helping to harvest the orange crop. Now all the ripe oranges had been picked, sorted, and packed. The biggest part of the crop had been sent to far-away markets.

"A good job well done," Sam's father had said to his workers. Everyone was happy about it.

All at once Sam heard his mother calling. He ran into the house and out into the kitchen.

"I just talked to the butcher," said Mother. "He has some very good beefsteak, but he can't deliver it. His truck has already gone out on delivery. Are you too tired to go to his store and get the steak? I want it for our supper."

"Steak for supper!" Sam was delighted. "I don't think I would ever be too tired to go after a steak."

"All right, then, run along, dear," Mother said.

Sam hurried to the butcher shop. "I'm Sam Adams," he said to the butcher. "Mother just telephoned you about a steak."

"Oh, yes," said the butcher. Then he took from the refrigerator a huge piece of beef. He laid it on the block so that he could cut off the steak easily.

"See this stamp?" he said. Sam looked and saw that the meat had been stamped with a kind of purple ink. "Whenever you see that stamp on meat," the butcher explained, "you know that the meat is good. A man inspected it. That means, he examined it very carefully and found it good, healthful, and tender. Then he put the stamp on it so that people who buy it will know that they are getting something good—extra good. That's range beef fattened with corn."

Sam almost ran home. He would have run if the sun hadn't been quite so hot. "There, Mother," he said. "There's an extra good steak. It was as easy as that."

But it wasn't so easy as that. Hard work had been done before that fine steak reached the butcher shop. The butcher himself could have told Sam about some of the work. Men at meat-packing plants could have told him more. Men who run trains could have told him some things, too. And Johnny, who lives on the great plains of the West, Johnny could have told Sam many things.

Johnny lives on a ranch called "Three Trees." It is called that because many years ago Johnny's grandfather set out several trees near the ranch house, so that it might have some shade.

Trees are scarce on the wide plains, except near rivers. Johnny's grandfather took good care of the young trees he had planted. Yet, in spite of that, all of them died except three. Those three trees grew tall and strong. The ranch was named after them.

Johnny grew up under the three trees. There he had his first ride on a mustang—that lean little, quick little horse of the plains. He sat in the saddle in front of his father and tried to yell, "Yippee!" as the cowboys did. He really didn't do very well at first, but he did better as he grew. "Yippee!"

Under the three trees Johnny listened to the tall tales that the cowboys like to tell. And then and there he decided that he wanted to be a cowboy, too.

Almost every boy who has read about cowboys or has seen them ride

Helen John

in the movies has wanted to be one. Just to think about a mustang and a lasso is exciting. Just to think about galloping over the plains on a mustang and yelling, "Yippee!" is adventure. But Johnny found out that being a cowboy isn't all just adventure. It's hard work, too.

Cowboys ride for days and days at a time. They look after cattle on ranches that seem as wide as the sky. They protect the herd from wolves that roam over the plains, stealing the fattest and finest young animals.

Cowboys work, too, to try to get rid of little animals called prairie dogs. These are sand-colored creatures that nibble the grass of the plains and dig at its roots.

There are millions and millions of prairie dogs on the plains. Two or three hundred of them eat as much grass as one cow. Under the ground they dig two-way tunnels that run in many directions. In many spots the grass is uprooted by so much digging, and soon it dies. Then there is less food for the cattle.

At different times of the year the cowboys round up the cattle and bring them into the corral of the ranch. A corral is a big pen not far from the ranch house. A high fence runs all around the corral.

Part of the cowboys' work is mending fences. Part is feeding the cattle in the corral. Mustangs must be trained to round up the herds and to drive the cattle into the cars which will take them off to market. Training the mustangs is also the work of the cowboys.

Sometimes cowboys drive herds of cattle to the nearest railway station, which may be many miles from the ranch. Sometimes they get on the trains with the cattle, though not on the same cars. They ride to the stockyards or city markets.

Day after day, week after week the cattle roam over the plains. New calves are born. Last year's calves grow up. Those born two years ago are old enough for the markets.

Some of the cattle from the Three Trees ranch wander about on the wide ranges that are owned by the United States. The ranchers must have the permission of the government to use these ranges, and they must pay for their use. Cattle from many different ranches can be found together on the government ranges. For months at a time the cattle graze without returning to their own ranches.

Every ranchman wants his own animals. But no good ranchman wants to keep those that do not belong to him. At different times of the year the cattle are rounded up by the cowboys. Each ranchman has his own cattle brought to his own corral.

How can a cowboy know the cattle that belong to the ranch he works

"Look way out yonder"

for? Each cow or steer more than a year old wears a brand on its skin. Each ranch, of course, has its own special brand. That of the Three Trees ranch looks like this:

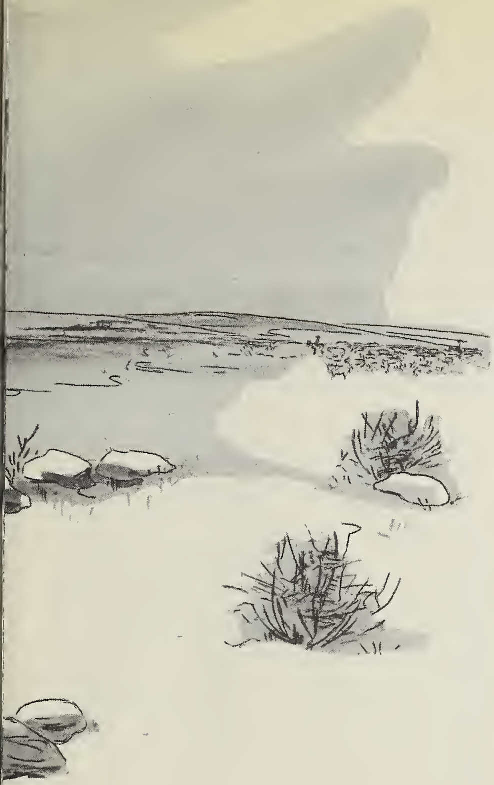
TTT

Of course, a young calf follows its mother. If the mother wears TTT, she belongs to the Three Trees ranch. And so does her calf.

For a long time Johnny had been begging his father to let him go on a roundup. But Father had always said, "You're not big enough. And you don't ride well enough, either. You have to be quick and sure in the saddle and strong, too, to ride on a roundup."

Johnny rode every day. He tried doing the stunts that the cowboys had taught him. Soon his muscles grew hard and strong. He learned to be quick and sure in the saddle. One day his father said, "You may go on the next roundup. Not all the way with the cowboys, of course. But you and I will ride out to help bring the cattle into the corral."

The great day came at last. That morning an excited Johnny mounted his mustang and rode out of the corral



with his father. They rode out in the direction from which the cowboys would come with the cattle.

The cowboys had been gone for some time. They had ridden for miles over the plains, rounding up the Three Trees cattle and helping to round up the cattle from other ranches.

At last the cowboys from Three Trees had rounded up their own cattle into a herd that was shaped like a great crescent. To get an idea of the shape of a crescent, think of the new moon. It is a crescent.

Slowly and carefully the cowboys moved forward, herding the animals together. It is tiresome—this moving so slowly and carefully. Yet cattle should not be hurried or worried. If they are, they lose weight.

As he rode across the wide, empty plains with his father, Johnny kept hoping that the cowboys would bring the herd in today. Today, not tomorrow, he kept thinking.

From where he sat on his mustang the world looked as round as a saucer and as flat as a pancake. As far as his eyes could see, the plain stretched away, away, and away, as if it were meeting the sky.

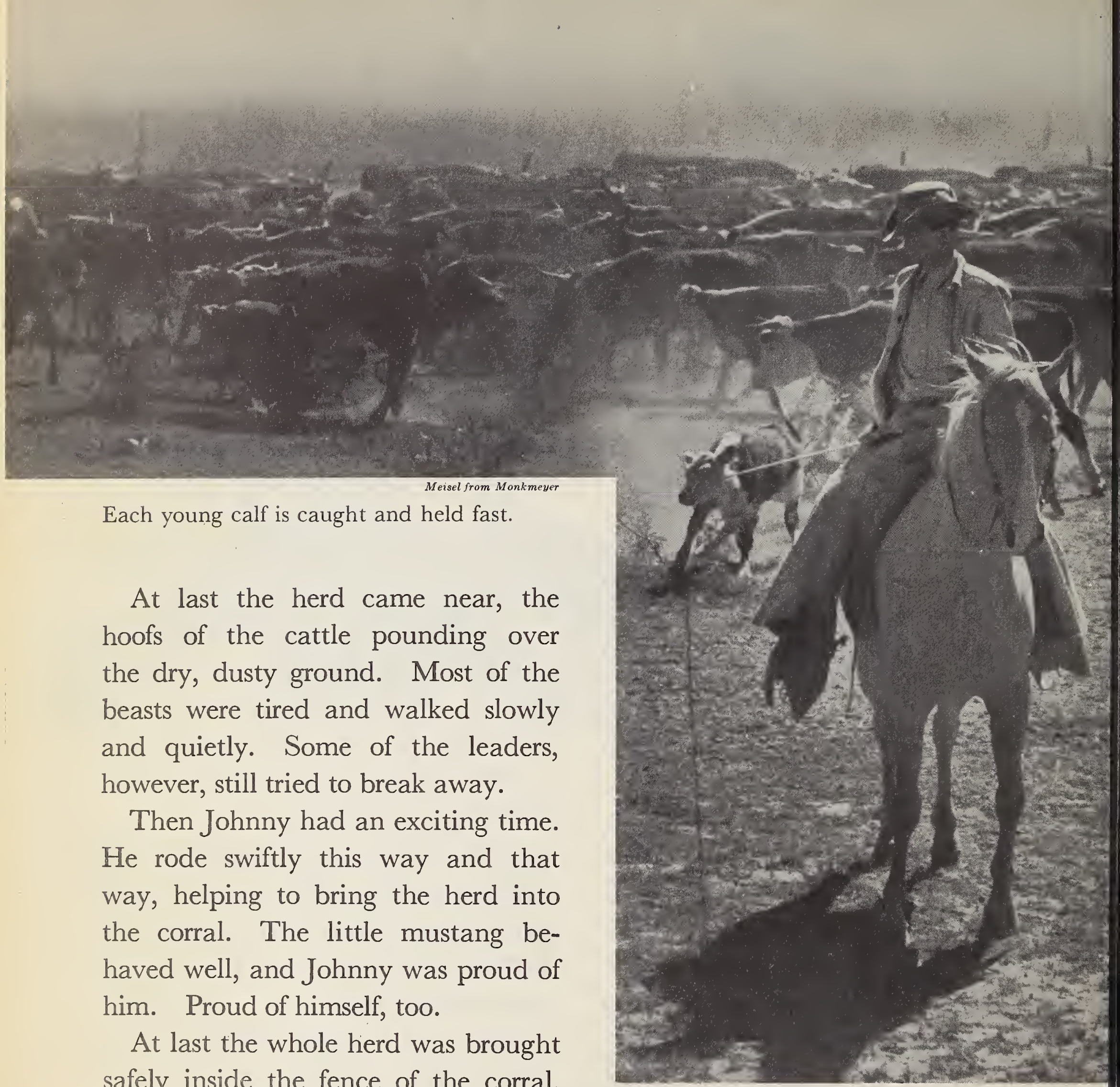
"Don't be too much disappointed if the men don't bring the herd in today," Father said. Johnny tried to be patient, but that wasn't easy.

After a time he said, "Look, Father. Look way out yonder."

Sure enough, several cowboys came riding over the edge of the world. It wasn't really the edge of the world. It only seemed to be, because the country was so flat.

Some boys would not have seen those cowboys so very quickly. But Johnny had lived all his life on the plains and his eyes had been trained to see things at great distances.

"Let's ride out in that direction," Father said, and away they went on their mustangs. Soon they could see the great moving herd. "They're heading this way," Father said. Still, there was a long time to wait.



Meisel from Monkmeyer

Each young calf is caught and held fast.

At last the herd came near, the hoofs of the cattle pounding over the dry, dusty ground. Most of the beasts were tired and walked slowly and quietly. Some of the leaders, however, still tried to break away.

Then Johnny had an exciting time. He rode swiftly this way and that way, helping to bring the herd into the corral. The little mustang behaved well, and Johnny was proud of him. Proud of himself, too.

At last the whole herd was brought safely inside the fence of the corral. Johnny took off his hat and yelled, "Yippee!" His face was wet with sweat and streaked with dirt. But he didn't mind. That was all part of being a cowboy.

The cattle bellowed and stamped their hoofs. They ran around and around trying to find a way out of the corral. There was no use.

Soon the branding would begin. Each young calf would be caught and held fast while one of the cowboys quickly held a red-hot iron to its side or its leg. On the iron was the brand TTT. The branding didn't take long, and the pain didn't last long. Johnny was glad of that.

One day Johnny's mother came out to the fence of the corral. She looked at the young calves and said, "I think this one would grow to be a fine cow. Can we keep her? And that one over there. Can we keep her, too?" Johnny's father told her, "Yes, if you like."

Sometime those two calves will supply milk for the family. The rancher usually keeps a few cows near his home for that purpose.

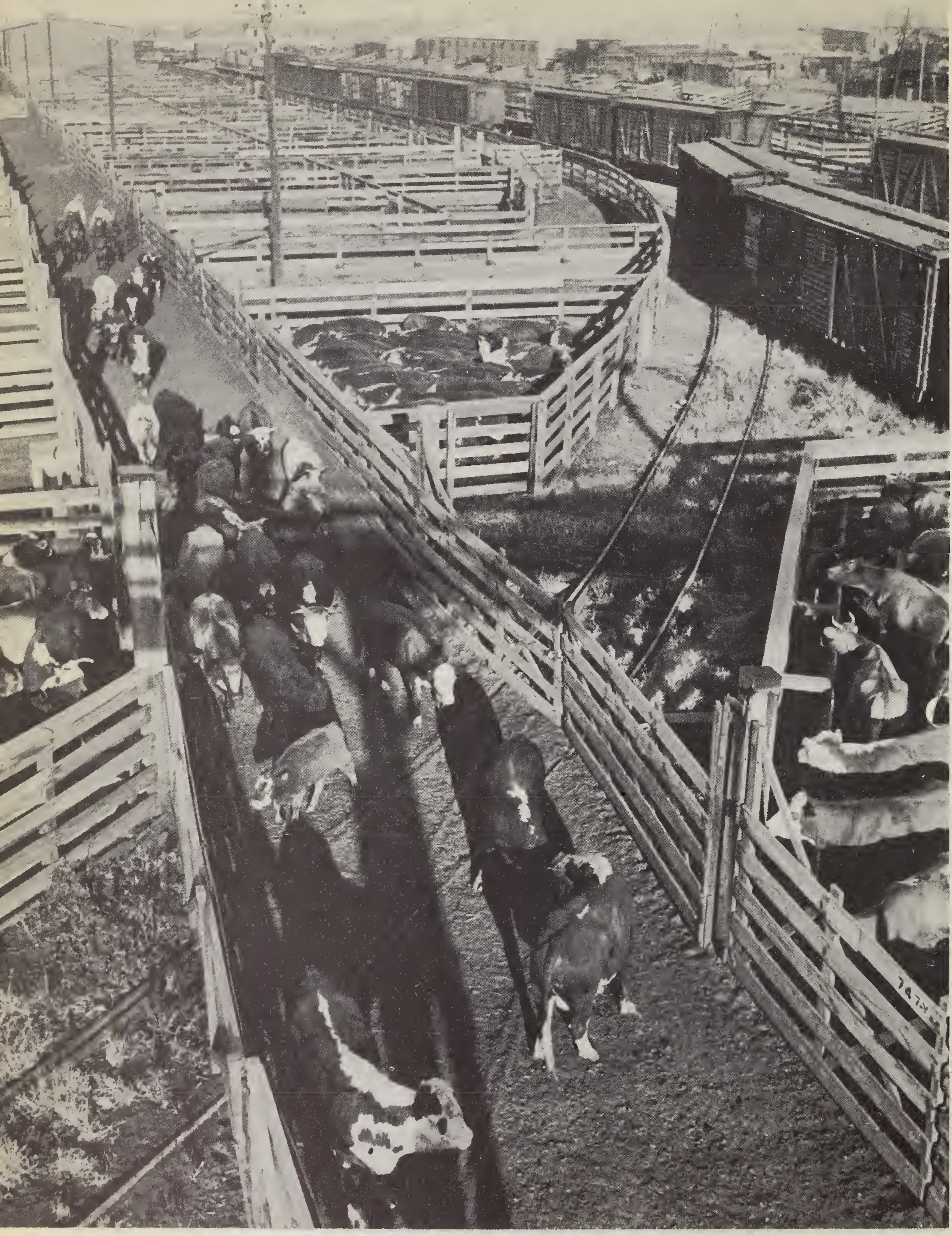
When all the young calves had been branded, there was still more work to be done. Some of the two-year-old cattle were separated from the rest of the herd. They were the fat ones, the sleek ones, the ones that were to be sent away to market.

When the time comes to send the cattle to market, several cowboys will drive them to the nearest railroad station. There they will be loaded on cars built especially for carrying cattle. No more then sixteen will be put into one car, for the animals must not be crowded as they travel.

The cattle cars will be attached to a freight train. The freight train will speed away to Big City or to some other large city where there are meat-packing plants. Several times during the trip the train will stop and the cattle will be taken off the cars to rest

Cowboys drive the cattle to the nearest railroad station. They do not hurry the cattle.

*H. Armstrong Roberts*



H. Armstrong Roberts

From the cattle cars the animals are driven into pens in the stockyards.

from their travels. They will run around for a time in fields near the tracks. They will have grain to eat and water to drink. Such fields have been fenced off for that particular purpose.

At last the journey will come to an end. The animals will be driven into the stockyards. From there they will be taken to a meat-packing plant. They will be killed. The meat will be cleaned, cut up, and packed, ready to be sent to shops all over the land.

Some of the cattle are not fat enough for market when they are brought in from the range. They will be kept for some time in the corral, where they will be given a great deal of corn. Most ranchers do not raise corn, so they must buy it from farmers of the corn belt.

Many ranchers sell cattle to farmers from the great corn belt. Such farmers are called feeders. They visit the ranches to select the kind of cattle they want, and they have these shipped to their farms. There the animals are put into barns or pens and are fed corn and more corn. When they are fat and sleek, they are sent to meat-packing plants. The butcher was thinking of such cattle when he said, "That's range beef fattened with corn."

Can you see that getting a steak for supper wasn't quite so easy as Sam thought it was?

## *Johnny Goes Shopping*

The pick-up truck rumbled along the road, stirring up little puffs and clouds of dust. The dust hung in the air for a moment. Then slowly it settled on the grass and weeds which were already coated with the soft, powdery stuff.

The road stretched on and on through the wide plains. It ran on toward the dim, dusty distance as if it would never come to an end. But it did come to an end.

Miles and miles beyond the Three Trees ranch house the road joined another road, a wide, smooth road. The wide road ran on through the plains to great cities. Johnny had never seen any of those cities, but he knew about them.

Inside the cab of the truck Johnny sat between his father and his mother. He was licking a beautiful red lollipop. Now and then he peered out at the trucks which passed them and which they passed. There were not many trucks, because not many people traveled over that road.

Once a big automobile, loaded with people, went swiftly around the pick-up truck. "Tourists," thought Johnny. "People who want to see what this part of the country is like."

Once in the dim distance he caught sight of a long train of cars. He could tell even at that distance that the train was a passenger train. He knew something about trains, even though he had never been on one.

Once, overhead, he heard the roaring of the motors of an airplane. He couldn't see the plane very well from the cab of the truck. If he had seen it, it is likely that he would have known what kind of plane it was. He knew about planes, too.

For a boy who had never been far from the Three Trees ranch, Johnny knew a great deal about different ways of traveling. But all the traveling he had ever done was in the truck or in the automobile or on his quick little, sure little mustang.

When he wasn't watching the road, Johnny was thinking about the wonderful day he had had. It had begun before sunrise with all the excitement of getting ready to go to town. That didn't happen often because town was ninety miles away.

"We won't be going away for a while," Father said. "So let's be sure to get all the things we need." Mother made a long list of the things that were needed.

Thinking it over, Johnny decided that they must have got everything on the list. Mother had bought a new dress. Father had bought a new suit. Together they had bought shoes and stockings and underwear and goodness knows what for Johnny.

They had bought for Johnny a cowboy suit—a real cowboy suit. It had trousers of heavy blue cloth. Over the trousers went chaps of leather.

A real cowboy suit

These are worn as protection against cactus, a sharp prickly plant that grows on the plains.

A gay shirt was part of the outfit. Around the waist went a wide leather belt, decorated with shining bright dots of metal. A neckerchief was also part of the outfit. Sometimes it was worn around the neck, and sometimes it was tied around the mouth as a protection against dust storms. Sometimes in cold weather the neckerchief could be worn on the head, under the hat, which had a very wide brim.

But the most exciting part of the outfit was the boots. They were of brown leather with red tops, and they had high, pointed heels. They were not so comfortable to walk in, but they held the feet of a rider in the stirrups of the saddle.

Johnny let the salesman put the rest of the outfit into a big box, but he wore the new boots. They had to be worn that very day, and at once, Johnny thought.

The family had lunch in a big hotel dining room. The best part of that came at the last. Ice cream! It had been a long time since Johnny had tasted ice cream. He ate two big dishes of it. So did Father. But Mother said one was enough for her.

After that they went to a large grocery—an enormous grocery. There they bought so many cans and boxes of food that Johnny wondered if the money would last. But it did.

"I'll stay here until the truck is loaded," said Father. "Then I have some other business to attend to. Why don't you two walk around and have another look at the stores until I'm ready to go home?"

Johnny walked proudly beside his mother, admiring the squeak of his new boots and jingling the money in his pocket. They looked in at the big shop windows. In some of the windows were beautiful ladies dressed in beautiful clothes and wearing beautiful hats trimmed with beautiful flowers and feathers.

Once Johnny had thought that the ladies were real. That was when he was a very small boy and hadn't seen much of the world. Mother had explained that the ladies were make-believe. They were set in the windows to show what lovely things were for sale in the stores.

Up one street and down another went Mother and Johnny. They looked in at the windows of department stores, hardware stores, drugstores, and grocery stores. There was so much to be seen. Things that couldn't be seen in the small stores that were dotted here and there over the plains. And yet, Johnny knew, this town was not really a big city.

They went into a confectionery store where they bought sandwiches to eat on the way home. Then they had more ice cream. Johnny looked at the candies in a glass case. He decided at last on some chocolate bars and some beautiful lollipops. And soon his money was gone.

Father was waiting when they went back to the truck. Johnny looked at all the boxes and cases piled in the back and thought, "Tomorrow's going to be fun, too." For Mother had promised that he could help put away all the canned goods they had bought. He had never done that before.

The pick-up truck rumbled along, rolling up clouds of dust. The sun, like a great ball, was sinking slowly in the west, just ready to drop over the edge of the world. Home was still a long way off.

"Eat your lollipop, son," Father said, laughing. "Don't wear it out on your shirt."

But Johnny was sound asleep.

## *Fishing from Cans*

The next morning Father carried all the boxes and crates of food into the storeroom of the ranch house. He pried off the lids. "Now," he said, "you will have plenty to do."

There was plenty to do

And there was plenty for Mother and Johnny to do. They took out the cans and set them neatly on the shelves of the storeroom. Cans of fruit on these shelves, cans of vegetables on those. This shelf was for the canned meat.

Are you wondering why people who raise beef cattle buy meat in cans? They buy it for the same reason that other people buy it—to have it right at hand when they want it. Even though ranchers raise cattle, hundreds of cattle, they can't have fresh meat whenever they want it.

Several shelves were for the canned fish. It happened that the first can Johnny took out of a box was a can of fish. Around the can was pasted a label—a beautiful label. And on the label was a picture of a fish—a beautiful fish.

"Oh, boy! Salmon!" Johnny was delighted. He had never yet had enough salmon. He had never had any fresh salmon at all, because that kind of fish doesn't live in the rivers of the plains where Johnny lives.

"Where does the salmon come from, Mother?" he asked.

"Most of it comes from the rivers of the northwestern part of our country," said Mother. "The salmon is a very interesting fish," she went on. "Wise men have studied the ways of salmon. Still they don't know all about this wonderful fish.

"The little ones are hatched in fresh-water streams, where they stay for two or three years. Then they make their way to the sea. How do they know their way to the sea? That is a question that no one can answer.

"Anyway, they go down to the sea, the deep, salty sea. They swim out into the water, perhaps fifty miles, perhaps as much as a hundred miles. They eat the food found in the sea water. They grow fat.

"When they are about four years old, they are ready to spawn. That means to lay eggs. Then they go back to the streams in which they themselves were once tiny eggs. How do they know the way back to their old homes? That is a question that no one can answer.

"Many salmon start back upstream at about the same time. Fishermen often speak of the salmon run. By this they mean the time when most salmon make their way upstream.

"The salmon run probably starts at the place where the ocean's waters are made cold by the rivers that empty into it. You see the rivers are colder at some times of the year than at other times. This is because they are fed by the cold mountain streams. Mountain streams are cold because their waters are fed by melting ice and snow.

"The journey of the salmon upstream is a very interesting one. You know enough about rivers to know that going upstream is much more difficult than going downstream. Some of the rivers run swiftly and it is difficult to swim against them.

"The salmon swim upstream, even though it is such hard work. They swim against swift rapids and leap up small waterfalls. Sometimes salmon will leap into the air as high as ten feet or more.

"Thousands and thousands of these fish swimming upstream to their old homes! Can you even imagine that, Johnny? No fish are caught until they have come into quieter waters. Then they are caught by the hundreds. Yes, by the thousands.

"Fishermen go out on the rivers with nets which they sink in the water. When they draw the nets up again, they are loaded with fish. The salmon are game fish. They fight against being caught. They struggle to get out of the nets.

"Of course, the fishermen do not catch all the fish. If they did, there would soon be no more. Some of them are left to spawn. The father fish makes a great nest from one to four feet deep in the gravelly part of a stream. The mother fish lays a countless number of eggs in the nest. Then the two float downstream, tail foremost. They never go back to their first homes.

"Great canning factories have been set up near places where salmon are caught in large numbers. Here the fish are cleaned, cut into pieces, and

If a salmon cannot leap the falls the first time, he tries again and again.

Ewing Galloway

The salmon fishermen have nets with corks at the edges. The corks float on the water.

packed into cans. Then the cans are tightly closed, put into water, and cooked for a certain length of time. Nearly all this work is done by special machines.

"Not all of the fish are canned. Some are marketed fresh. These are packed in ice and sent to far-away markets in refrigerator cars. Some salmon are frozen at factories close to the rivers where they are caught. Some are dried and then packed. And I think that's about all I can tell you about salmon."

"How did you learn so much about fish, Mother?" Johnny asked.

"Once upon a time," Mother said, "I lived on the bank of a wide river where I watched for the salmon run every year. More than once I went out to watch my father and other fishermen bring in boatloads of fish."

*Henle from Monkmeyer*

Soon these herring will be packed into cans as domestic sardines.

Johnny thought about that as he worked. He wondered what it would be like to live on the bank of a river not far from the ocean. He had never seen an ocean, nor even been near one. He couldn't help wondering about the great oceans.

After a while he found a box of sardines. "Do you know a good story about these little fish?" he asked.

Mother looked at the label on the box. "These are domestic sardines," she said. "Domestic sardines are caught in the waters near our own country—waters near the northeastern part. Some people think that imported sardines are finer and better in taste. The imported kind are caught in waters across the sea. There are really no true sardines. They are small fish that never do grow to be big. What we call sardines are the baby fish of the herring and of other small fish.

"Many are caught in seines, or nets. They are cleaned and dried and placed in boiling oil. The oil is partly drained from them after a time, and then they are packed in boxes. Lids are put on tightly and the cans are placed in boiling water. When they have been in the water a certain time, they are taken out, cooled, and labeled. Then they are ready to be sent to markets far and near."

"Any more fish?" asked Johnny.

"Look around," Mother said.

Out of a box Johnny brought a little round can with another gay, pretty label. "Oh, tuna fish!" he exclaimed. "Now we can have some of that good tuna-fish salad."

"Oh, yes," Mother said. "Hand me the cans, and while I set them here I'll tell you a little about tuna."

"You might think," Mother went on, "that the tuna is a very small fish, since it comes in such a small can. Really, it is one of the biggest fish of the ocean.

"Some tunas grow to be as long as ten feet and weigh hundreds and hundreds of pounds. They live in warm ocean waters. Some live in the ocean that washes the shores of the southwestern part of our country. Some live in other oceans.

"Many fishermen go far out on the sea to bring in the tuna. They catch such big fish in nets, not with lines. Sometimes it takes several men to pull in a tuna, because the fish is game and fights against being caught. Some men go tuna fishing just for the fun of it. But many make their living riding the ocean waves and catching the big fish."

Johnny drew a long breath. "I wonder what it really is like to be on the ocean and to catch big fish," he said. "I wish I could do it sometime. All the fishing I ever do is from cans."

Mother laughed. "That's true," she said. "But then, some boys who go fishing on the ocean have never gone on a roundup. And maybe they would think that the most exciting adventure in the world."

Choose the kind of fish you like best and then find out all you can about that kind. Tell in class what you have learned.

## More Foods

Johnny went on helping put things on the shelves. There were cans of fruit such as plums, peaches, and pears. There were cans of vegetables such as peas, beans, and tomatoes.

These fruits and vegetables, Johnny knew, had come from canning factories, some large and some small. Most of these factories were near the orchards or the truck farms where good foods are raised.

All the canning is done with the help of machinery. The foods are prepared and cleaned. They are put into cans of several sizes. These are placed in large containers shaped somewhat like baskets. They are lowered into enormous iron kettles, and there the foods are cooked.

Labels are put on the cans by machinery. Workers pack the cans in cases. They nail lids on the cases, and then they are ready to be shipped off to market.

Now in the storeroom at the ranch house all Johnny and Mother had to do was to set the cans neatly in place. They put fruit on some shelves, vegetables on others.

"What's in the big box?" Johnny asked when all the cans had been set on the shelves.

"You'll be glad to know that it is sugar," Mother said.

Cutting sugar cane with a long sharp knife

*Ewing Galloway*

Inside the box were five-pound bags of sugar. There were also one-pound boxes. Some of these boxes contained brown sugar and some powdered sugar. All the sugar might have come from either sugar beets or sugar cane. Few people can tell the difference, and one kind of sugar is as good as the other.

Sugar cane grows something like corn. But it cannot be raised in all lands where corn is grown because it needs a longer time and more warm weather for growing and ripening.

A sweet juice forms in the stalks of the sugar cane as it grows. A sweet juice forms in the cornstalks, too. But there is not so much of it as there is in sugar cane, and it is not so sweet.

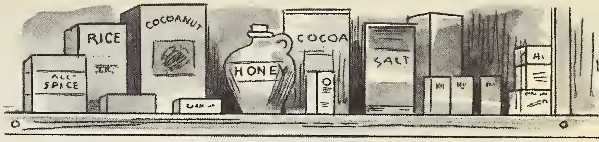
When sugar cane is full grown, it is cut and loaded on wagons. It is taken to a mill where the juice is crushed out. When it is cooked, the water passes off in vapor and what is left is molasses—heavy, dark, and strong. Several things are added to the molasses and it is cooked again. Finally it turns to sugar, soft and white and fine.

Sugar beets contain sugar, as you can guess from the name. They are somewhat like red beets, turnips, and other root vegetables that also contain a little sugar. All these root vegetables are hardy and can be grown where the summers are short.

When sugar beets are ripe, they are pulled from the ground by machines. The beets are gathered and their leafy tops are then cut off. After that off to the factory they go. There they are washed, cut into thin slices, and put into big tubs or vats. They are soaked in water until all the sugar has been taken out. The sweet water goes through the same process that the juice from the sugar cane goes through.

There is still another kind of sugar. That is the kind which comes from boiling the sap of maple trees.

And there is honey, that delicious sweet which the bees gather from the flowers and store away. Once, long ago, people depended on maple sugar and honey for all their sweetening.



Ask your mother if you may make a list of the things in her kitchen storeroom. Bring your list to school and read it to the other children. They will read their lists, too.

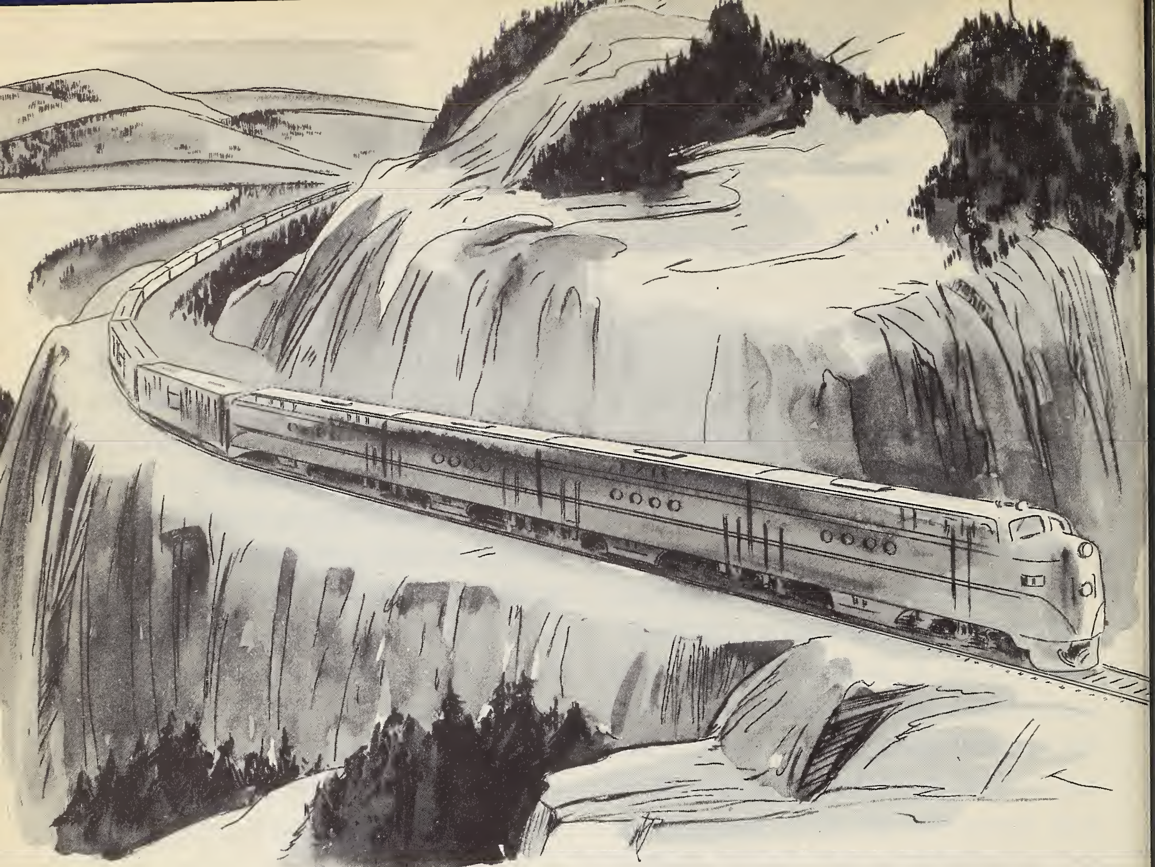
On the blackboard make a list of foods that have not been talked about in this book so far. Try to find out some interesting things about those foods—where they come from, how they are used. To learn about them, you may ask your father and mother. Perhaps your grocer will tell you about some of them.

Loading a great pile of sugar beets

*U.S.D.A. photograph by Rothstein*

Pouring the sap from a sugar maple tree

*U.S.D.A. photograph by Hunton*



# WHY FOODS GO A-TRAVELING

You know that the most important foods are milk, bread, meat, fruits, and vegetables. You eat such foods every day. Yet you wouldn't want the same kind of meat, the same kind of vegetables, the same kind of fruit day after day and week after week. You want different kinds of foods; that is, you want variety.

Variety makes eating more fun. Besides, some foods taste especially good at some times, and some taste especially good at others. What is better than a glass of chilled orange juice or a dish of ice cream on a warm day? And what is better than hot chocolate or steaming soup when the weather is cold?

It is pleasant to be able to choose from a variety of good things to eat. Yet people have not always been able to do that. There was a time when they had to eat what they raised or what they made close at hand. Let's see why.

Try to imagine what our country was like before the railroads were built. There was a time, you know, when there were no shining steel tracks and no big, powerful engines. There were no electric trains. There were no streetcars, no trucks, and no busses. There were no swift, shining automobiles. And in those long-ago times no one had ever dreamed of riding high in the sky over land and water in airplanes.

Can you imagine what our country was like when there were only narrow dirt roads and not many of them? The narrow roads were rough. Often they were knee-deep in mud. Sometimes they were flooded with water. Sometimes in some parts of our land they were drifted with snow.

In those days many people traveled on horseback or on the backs of mules. Others went in carts or in wagons or in great heavy stagecoaches. Many people had to walk wherever they went. However they went, they traveled slowly and uncomfortably.

Rivers were used for travel then just as they are now. But not every river was safe for travel. And not all the people lived near enough to rivers to use them. And traveling by water was almost as slow, of course, as traveling by land.

People did not often make long journeys just for the fun of going some place. They made such journeys only when necessary. You can see why the people of one community didn't know those of another.

People could not easily send messages because there were no telegraph wires and no telephones. All letters were carried on horseback. And as to sending goods from one place to another, that was so difficult that it wasn't done very often.

Do you see why the people of each community had to get along with what they had? Do you see that living was much different from what it is now? The homes were not so very comfortable. Clothing was not so comfortable. And there was not much variety in foods.

Let's think about foods.

Long, long ago farmers and their families lived on the foods they raised. Usually they had plenty to eat, but they had the same things over and over, day after day.

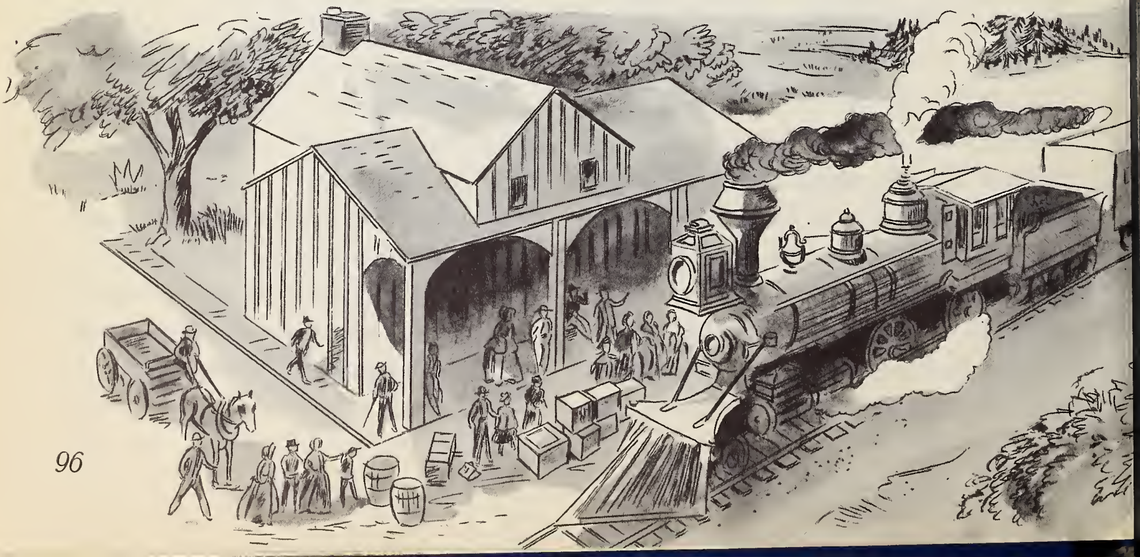
City people depended on farmers for most of their food, so they didn't have much variety either. Some of the people in cities had their own gardens, where they raised small fruits and vegetables.

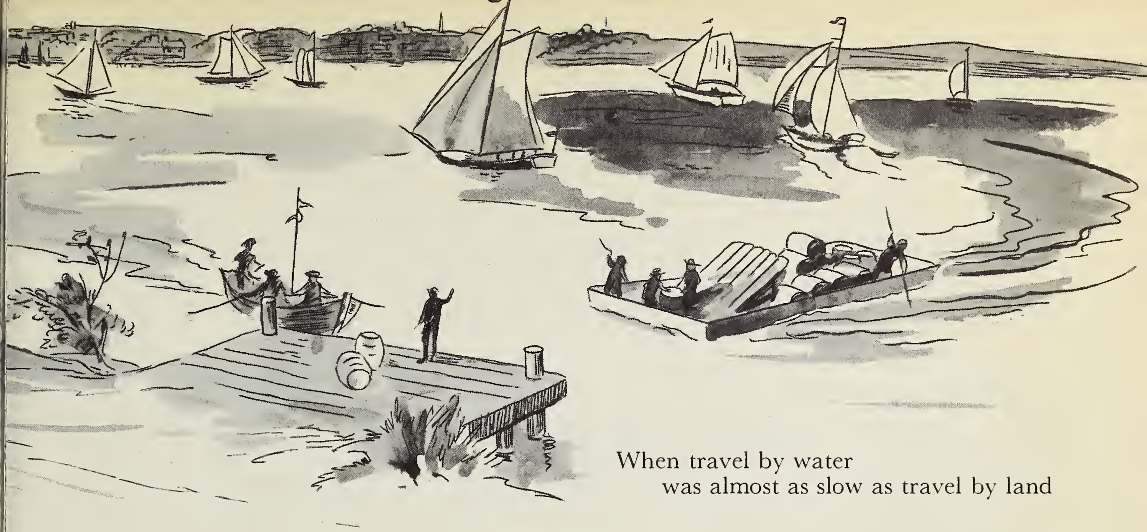
Some city people also raised animals, so they could have fresh meat when they wanted it. Chickens and turkeys roosted in trees. Ducks paddled around in puddles of water. Streets were often overrun with cattle and sheep and hogs.

Isn't it strange to think of pigs rooting in gutters? Or cows wandering along city streets? Or sheep nibbling grass in the yards? It didn't seem strange to the people who lived long ago. They were quite used to such sights.

When better roads were built, foods began to go traveling. Big wagons rumbled along the highways, carrying grains, fruits, and vegetables to markets. Then city people had a greater variety of foods.

Farmers had a greater variety of food, too. They went to town oftener.





When travel by water
was almost as slow as travel by land

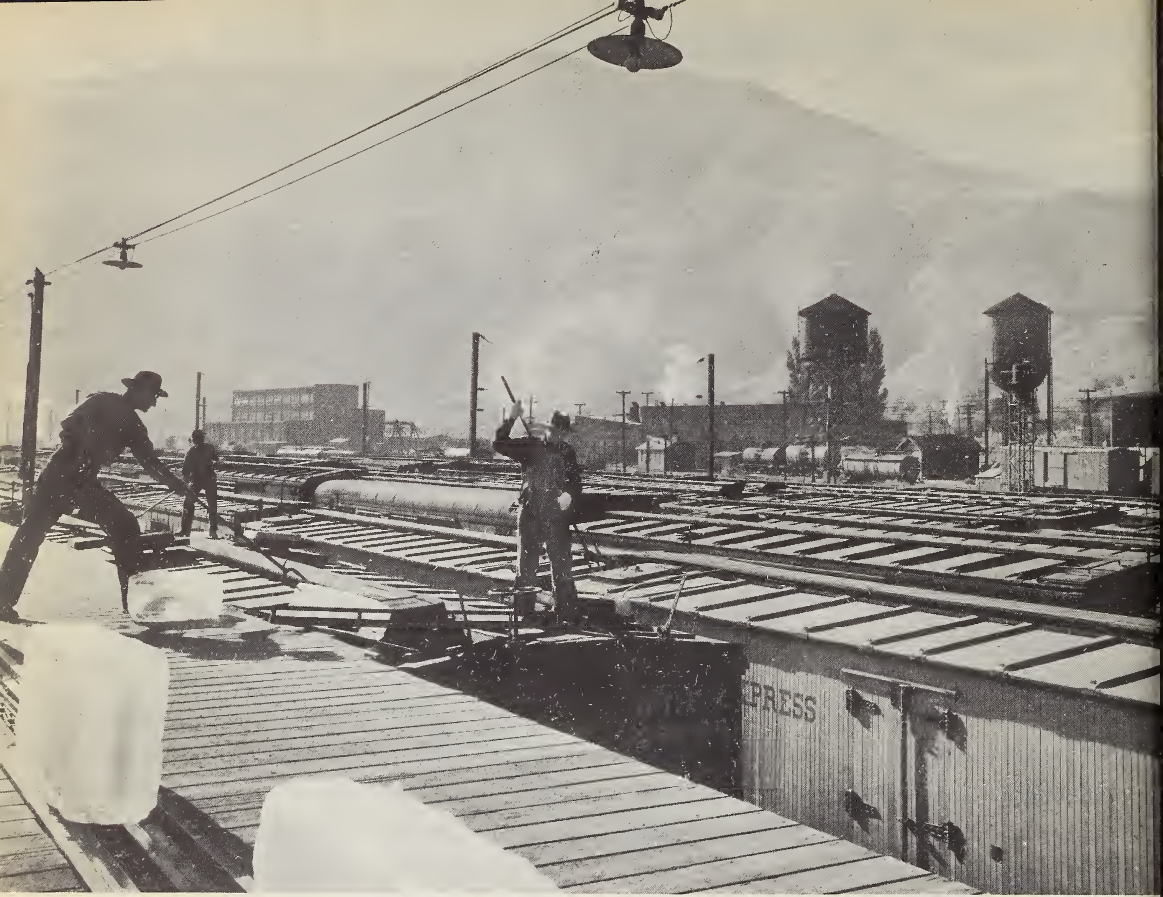
There they bought foods that had been raised in other communities.

Years went by. Many, many years. Railroads were built and trains ran from one town to another. Then foods began to travel still farther away from the farms where they were raised. They traveled in freight cars east, west, north, and south.

Can you imagine how pleased all the people were to have so many different foods? Oranges went traveling from the warm, sunny south to the cold north. Apples went traveling from the north to the far south. Grapes and peaches, strawberries and cranberries, and other good fruits went on long journeys. Bananas that had come from over the seas went traveling in every direction.

Yet even after fast freight trains began to carry good things to eat,

When trains first ran from one town to another



Courtesy Great Northern Railway

The workmen scoot the ice into the tops of the refrigerator cars with long forked poles.

people did not have the variety that we now have. Can you think why? It was because men had not yet learned to take care of all the foods that they might have shipped.

Fresh fruits and vegetables, fresh fish and meats spoil quickly. People soon learned that, by the time such foods had been packed in warm freight cars for several days, they were not fit to eat.

After a while someone had a very good idea. Someone thought of making freight cars like big iceboxes on wheels. Refrigerator cars!

Such cars are so common now that no one thinks much about them. But they weren't always so common. Once everyone thought that they were wonderful. They brought about great changes in the shipping of food.

A refrigerator car is made so that the top of it can be pushed back. Big pieces of ice are packed on shelves inside the car, just under the top. Sometimes the ice is ground very fine so that it looks almost like snow. Either way, the ice makes the inside of the car almost as cold as your own kitchen refrigerator.

Ice melts, you know. When much of the ice in the car has melted, the train stops at an ice station. There men quickly pack in more ice.

All foods are packed more carefully than they were long ago. Careful packing helps to keep food clean and also helps to keep it from spoiling. Fruits and vegetables that must travel far are picked quite green. They ripen on the long journey.

Many fine foods are now being shipped by air. Such foods can be picked ripe. Their journey is made so swiftly that by the time they reach the market—perhaps a thousand miles away—they are as fresh and good as when they were picked.

People have just begun to use air roads for shipping. When you are as old as your father is now, much may be done by the use of airplanes all over our land.

However that may be, faster ways of sending food have given people a greater variety of food. Your mother

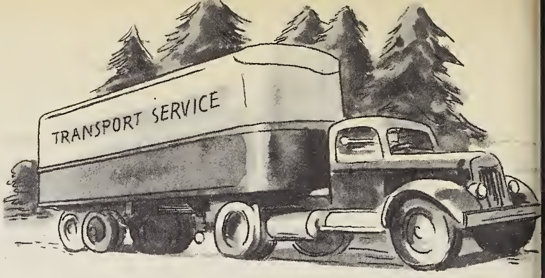
Foods travel hundreds of miles by air in the time it took to go a little way by wagon.

*Pan American Airways System*

may go to the grocery store and have her choice of a dozen kinds of fine fruits. She may choose from as many different kinds of vegetables. She may choose from a variety of meats. She may choose from many kinds of fish—canned or fresh.

In the grocery store she looks carefully at all the things on shelves, on racks, and in cases. She thinks, "Will my family like this or that?" She buys what she thinks everyone in the family will enjoy.

People in nearly all parts of our land may choose from a variety of foods. The greater variety they have, the still greater variety they want. But to get variety, one community must depend more and more on other communities. People hundreds of miles away, perhaps, depend on what is raised or made in your community. You depend on people of other communities hundreds of miles away. So, you see, the work of everyone is important. It is important not only at home, but also everywhere else.



Learn about the railroad lines that come to your community or to the town that is nearest you. What foods do the freight trains bring to your community? Which of these foods come in refrigerator cars?

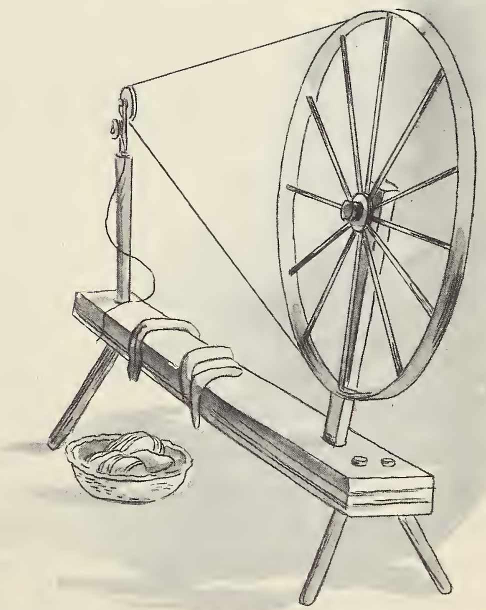
Learn about the truck lines that bring food to your community. What foods do they bring?

Do you live near a city that has an airport? If so, find out whether any foods come to your community over air roads.

Make a list of foods that you would have to do without if there were no railroads and no truck lines.

Does your community raise foods that are sent to other parts of our country? If so, find out what they are. Learn how these foods are packed. Learn how far they travel.

# *Everyday Clothing*



# WOOL CLOTHES

## *New Sweaters for Jack and Jill*

Jack and Jill walked up the hill. The hill runs up, up, up, from their kitchen door. From its top there is a better view of the bay than there is from anywhere else around.

The bay is a long, wide arm of the sea which reaches far into the land. Along its shores are many little villages where fishermen live. Far out in the bay are wide fishing grounds where fishermen work.

Jack and Jill are twins. Their father is one of the many men who make their living by fishing in the bay. Some of the men fish for lobsters and clams near the shore. Some go out after sea herring. Some fish for the little silvery sardines. And some go still farther out in the bay to fish for haddock and cod.

Many of the fishermen go out in big sailboats called schooners. Sometimes they stay at the fishing grounds for several days. Of course they take food along and sometimes extra clothing—warm clothing. For who knows when the sea winds will blow strong and cold? They wear waterproof coats, hats, and boots.

On the deck of each schooner are many small rowboats, called dories. At a place where the fishing is good, the dories are let down on the water. The men go down the sides of the schooner and get into the dories. Then their real work begins.

There are different ways to catch fish. Some of the fishermen use nets weighted with lead so that they will sink quickly in the water. The fish are caught in the nets and are then pulled into the boats.

Some fishermen use long lines to which many shorter lines have been fastened. At the ends of the short lines are bait hooks. Little fish are used for bait, because big fish eat little ones. When the big fish try to swallow the little ones on the hooks, they are caught.

When the men have caught a boatload of fish, they go back to the schooner. The fish are lifted into the boat, where they are packed in ice to keep them from spoiling.

Jack and Jill walked up the hill to watch their father's schooner as it sailed out on the bay. The brisk wind carried the ship swiftly over the waves. By the time the twins had reached the top of the hill, the schooner was far out on the bay.

Other boats had gone out, too. Some of them had no sails at all. They were power boats. Jack and Jill admired the swift power boats. Still they thought the schooner was prettier, although its sails were grimy and gray and had many patches.

The twins were glad, however, that the schooner had an engine as well as its sails. For sometimes the winds blew lazily. And sometimes they blew from the wrong direction. Then the schooner could depend on its engine for power to carry it over the waves of the bay.

This morning the wind was not a bit lazy. It was brisk and strong. Chilly, too. Jill shivered a little as the wind whipped her dress about and blew cold through her sweater. That sweater had become thin from much wearing, and it was too small to be buttoned snugly all the way down the front.

Jack's sweater was thin, too, and it was much too small for him. But he didn't shiver. No, not Jack. He stood quite still and straight as he watched the schooner sail nearer and nearer the rim of the world.

"I wish Father could have stayed at home today for our birthday dinner," Jack said.

"So do I," Jill agreed. "It won't be a real birthday without Father." The twins turned and walked slowly back to the warm house where Mother was waiting for them.

The day passed slowly. That is the way of all days on which something exciting is to come near the end. Late in the afternoon there was a knock at the door. Jack and Jill ran quickly to open it, and there stood Grandmother!

"Surprise and a happy birthday!" she said.

Who had expected that Grandmother would come? No one; that is, no one but Grandmother herself.

"I just couldn't let your birthday go by without seeing you," she said. Mother and the twins were so pleased to have Grandmother come that for a time they almost forgot about Father out there in the bay. Almost, but not quite.

The birthday dinner was fun. The ice cream was "something out of this world," Jill said. And the birthday cake was the best that she and Jack had ever tasted.

It didn't matter at all that the cake looked a little one-sided. That was because a huge piece had been cut off. That piece was for Father, and he had taken it with him. It was exciting to wonder where on the wide bay he would be when he ate it.

"I hope that Father has good fishing," said Mother. "So do I," said Jack and Jill. "And so do I," said Grandmother. Good fishing would fill the boat quickly. The sooner the boat was filled with fish, the sooner Father would come home.

After dinner Grandmother opened her big suitcase and took out two boxes. One was for Jack and one was for Jill. Jack took his box with a "Thank you, Grandmother," and then shook it a little. Nothing rattled inside. Nothing rattled inside Jill's box either. Besides, both the boxes were light, very light, as if nothing at all were inside.

"Why don't you open them?" Grandmother suggested.

The twins opened the boxes with fingers that shook with excitement. Out of Jill's box came a woolen sweater, soft and light, and as red as a cherry. Out of Jack's box came a woolen sweater, soft and light, and as blue as the sky.

"Exactly the right size!" cried Jack, as he quickly slipped into his.

"Exactly the right size!" cried Jill, as she quickly slipped into hers.

"I hope not," said Grandmother, frowning a little. "If those sweaters are just the right size now, they won't do you very much good—the way you two are growing."

She put on her glasses and examined the fit of the sweaters. She pulled at the sleeves to make sure that they were really too long, as she had intended. She looked at the shoulders to make sure that they were a little too broad.

"They aren't the right size now," she said at last, smiling. "They are a bit too large, just as I intended they should be. You'll grow into them soon enough."

"So nice and warm," Jill said happily. "Thank you very much, Grandmother," she said.

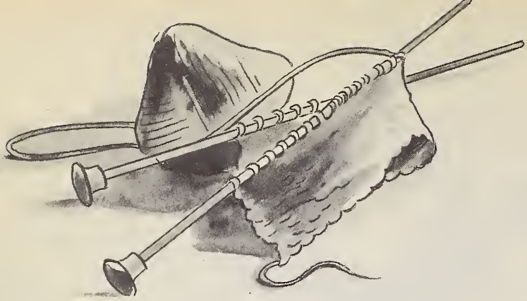
"Thank you, Grandmother," said Jack. "Did you knit them yourself?"

"Yes, my dear, I did, every stitch," Grandmother said.

"Just think!" Jill said. "Grandmother made these beautiful sweaters all by herself."

"No, dear," said Grandmother. "I didn't say I made the sweaters all by myself. I said I knitted them. You see, there's a big difference. Before I could even begin my knitting, many people had done a great deal of work to help make those two sweaters. They are people I shall never see, very likely, but I know something about the work they do."

Grandmother was right. The work she did was a very small part of all the work that was done to make those sweaters. To understand how that is true, let's find out what was done before Grandmother began her knitting.



Before you read on, perhaps you would like to talk about knitted garments. Do you have a sweater, a cap, mittens, or stockings that were knitted by hand? Would you like to tell where they came from and what you know about them? Knitting is done by machines, as well as by hand, you know. Do you have any garments that were knitted by machines?

## Making Wool Yarn

Grandmother bought the yarn for the twins' sweaters at a store. The saleswoman who sold it to her works for a store owner or manager. He probably bought the yarn at a wholesale store. Many people work there.

The wholesale store bought the yarn from a factory or woolen mill where it had been spun. There the spinning was done by machines. All machines, no matter how large or how small, how fast or how slow, have to be cared for. Many men and women are needed in woolen mills to care for the machines. Many men and women are needed to do other work, too, that machines cannot do.

The managers of the woolen mill bought the raw wool at a market. The market man bought it from the men who raise sheep. Wool is sheared from the backs of sheep. And now you have come back to the beginning of those red and blue sweaters.

Sheep are raised in many different parts of our country—on little farms, on big farms, on middle-sized farms, and on wide-spreading ranches.

Some farmers, even on large farms, raise only small flocks of sheep, perhaps fifty or less. The size of the flock depends on the kind and amount

A small flock of sheep graze among fruit trees on a small farm.

Kaufmann & Fabry Company

Library of Congress (Rothstein for U. S. Resettlement Administration

A sheep herder driving a large flock of sheep to the hill country

of pasture on the farm. Sometimes sheep are allowed to graze in the same fields with cows. Sometimes sheep graze over land that is not good enough for pasturing cows.

Sheep are raised in large numbers on those parts of the land that are too rough or too hilly for the growing of crops. And too rough and too hilly to be good pasture land for cattle. Such lands are either owned or rented by men who raise sheep.

Sheep get along very well on rough, hilly lands. They can climb steep hillsides. Their sharp teeth nip the leaves from low bushes and the short grass which grows low on the ground.

Ranchmen employ sheep herders or herdsmen to look after the sheep and their lambs. Each man guards a flock, with a dog or two to help him.

Sometimes the herdsmen are away from a ranch house for several months at a time. They often live in small huts perched on the hillsides, so they will be near their flocks. They guard them from wild animals that would like nothing better than to carry off the finest and fattest.

In winter, herdsmen often have to rescue their flocks from fierce blizzards and snowstorms. They drive the flocks into the great sheds that stand here and there on the ranches.

Kaufmann & Fabry Company

The sheep loses his warm coat of wool.

When spring comes, the herdsmen drive their sheep to the shearing sheds near the ranch house. There the wool, which grew long in the fall, will be clipped from the sheep.

Men who shear sheep use clippers shaped something like those used by barbers. They are larger, of course. It is exciting to watch the sheep shearer run a clipper along a sheep's body. Zz-zz-zz-zz, goes the clipper, and the fleece falls away, leaving only a short coat of wool. That short coat will be enough in warm weather. By cold weather the sheep's coat will be longer again.

The fleece is rolled tightly, tied, and put into an enormous bag. When the bag is filled, it is loaded onto a truck, with many other big bags, and hauled to a railroad station. From there it is shipped off to market.

Owners of woolen mills buy fleece, or raw wool, at the market, you remember. Before the spinning begins, more work must be done. To understand something of this, you must know about the nature of wool as it is sheared from the sheep.

First you must know that a sheep's wool or fleece is made of hair, very fine hair. You may find that hard to believe if you have seen or touched a sheep's fleece. Yet it is true.

The fine hair of a sheep's wool is very different, however, from the hair of your head. Each hair of your head is smooth and sleek. Each hair can easily be separated from the rest of your hair. And your hair can quite easily be combed smooth even when it is badly tangled.

The fine hairs that make a sheep's fleece are neither smooth nor sleek. They are fuzzy and crinkly. They grow matted together. Wool must be combed before it can be spun, though that cannot be done while it is on the sheep's back.

Before wool is combed, it must be washed. You can easily see why. The sheep wander about. They sleep on the ground. In dry weather dust settles on their backs, and in wet weather the rain drives the dust deep into their wool. Burs and other sticktight seeds get caught in the wool. Besides, there is much oil in a sheep's body, as you know if you have ever rubbed your hand through a fleece.

Dirt and oil are washed out in big machines especially made for the purpose. Soap and other strong cleaners are used.

When the fleece is dry, the combing begins. This, too, is done by machines of a special kind. After the combing, the hair which makes the wool is less crinkly, less rough. But it never becomes as straight and as smooth as your own. To see this for yourself, examine a bit of yarn. Or pull a few threads from a piece of woolen cloth and look at them closely.

From the combing machine the wool is put into great tubs or vats, where it is dyed. In one vat is red dye like that which was used to dye the yarn for Jill's sweater. In another is blue like that which was used for Jack's. In others are yellow, green, orange, purple, black, and many other colors. And in some there are no dyes at all. In these vats yarns are bleached, or made white.

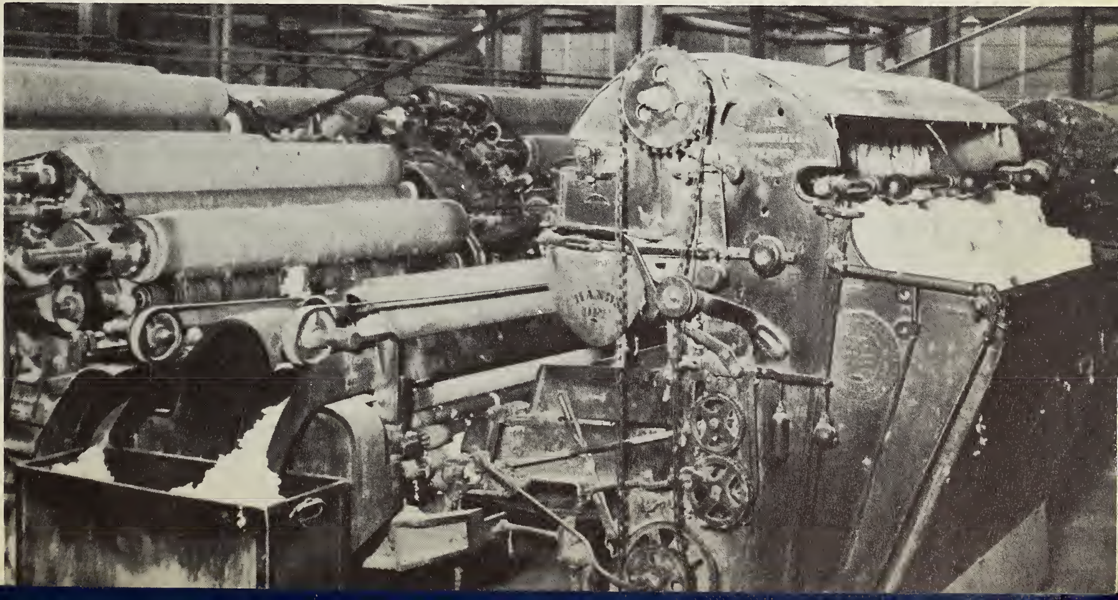
The dyed wool goes to another machine, a spinning machine. There the fine hair is twisted together. To get an idea of how spinning is done, you may twist some fine threads between your thumb and your fingers.

Not all sweaters are knitted by hand as Jack's and Jill's were. Some are knitted by machines. Other garments, too, are knitted by machines. Perhaps you have mittens or stockings or a cap or a beret knitted on a machine of one kind or another.

Not all the spinning machines spin wool into yarn. Some spin the wool

The sharp metal teeth on the long rollers of this machine comb the wool.

Ewing Galloway



into thread, of which cloth is woven. There are factories that weave the wool threads into cloth. Other factories make the woolen cloth into coats, suits, dresses, slacks, and many other warm garments.

To make the hundreds and hundreds of garments that are needed all over our land, hundreds and hundreds of people work every day. They work day after day, year after year. Even to make the yarn of which the birthday sweaters were made, many people did a great deal of work.

Now you know what Grandmother meant when she said that she didn't make those red and blue sweaters all by herself. Nobody knows just how many people helped her.

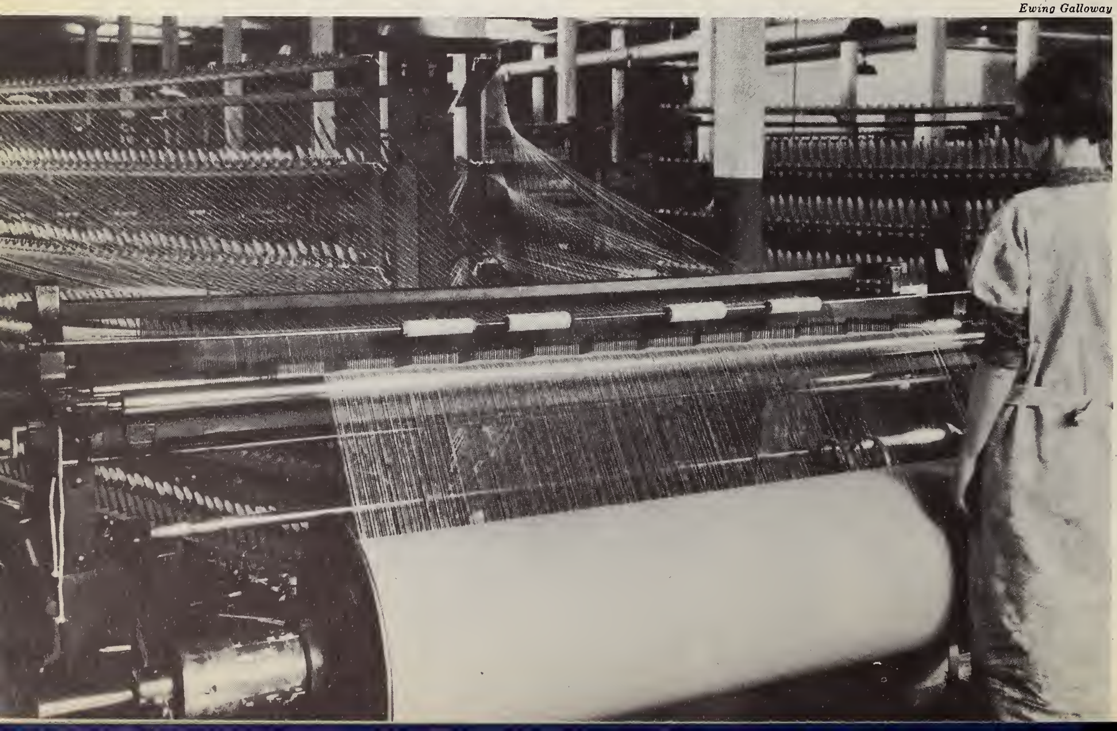
How many in your class are wearing garments of wool? Are they knitted garments or woven garments? What difference do you see between knitted and woven garments?

Bring a scrap of woolen cloth to school. Pull the threads and see how fuzzy they are. Can you tell why?

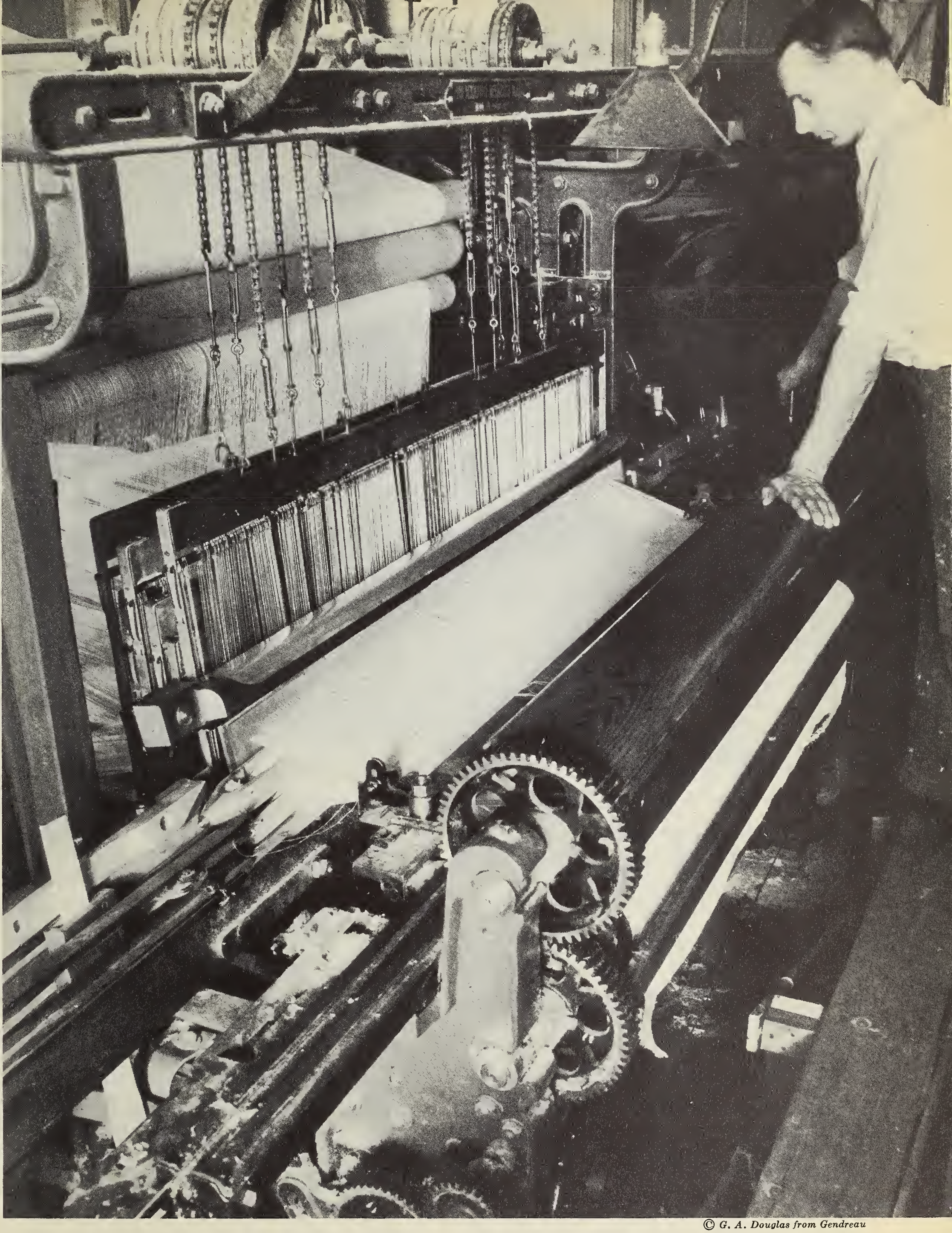
Name all the things that were done to wool before it was made into yarn. Name them in order.

If you have ever visited a farm where sheep are kept, tell about it.

This machine arranges all the threads of the cloth that go in one direction.



Ewing Galloway



© G. A. Douglas from Gendreau

This machine weaves threads crosswise through other threads that come through the weaving machine. Where do you see the woven cloth coming out of the machine?

# COTTON CLOTHES

## *A White Dress with Red Dots*

Jill had another birthday present besides the sweater that Grandmother had knitted. And Jack had another present, too. But that doesn't come into this story.

Jill's other present was a dress—a pretty dress, white as snow. Red dots went dancing all over that dress, and around the waist was a belt of shiny red leather.

It was the prettiest dress Jill had ever had, and she wore it only on special days. But she went to look at it every once in a while just to see how pretty it was.

Where did it come from, that pretty white dress with red dots that went dancing this way and that way? It came from a department store in a city where Father and Mother went now and then to shop.

Jill knew she wanted that dress the moment she saw it. Mother said, "We'll see first if it's right for you. It may not be the right size, and it may not look well on you."

A saleswoman helped Jill try on the dress. It was just right! Jill looked at herself in a three-way mirror. She admired herself very much. Any little girl would admire herself in such a pretty white dress.

Mother was pleased with the dress, too. So Father paid for the dress, and then it was Jill's very own. It was put into a box, and Jill carried it out of the store very happily.

How Jill got the white dress with the dancing red dots is a very short story, you see. How the dress came to the big department store is a very long story.

Someone from the department store bought the dress at a wholesale store. It was delivered in a truck with dozens and dozens of other dresses. It was unpacked, pressed, and hung on a hanger waiting for someone to buy it. But that is only the beginning.

The wholesale store had bought the dress from the factory where it was made. And this is how it was made.

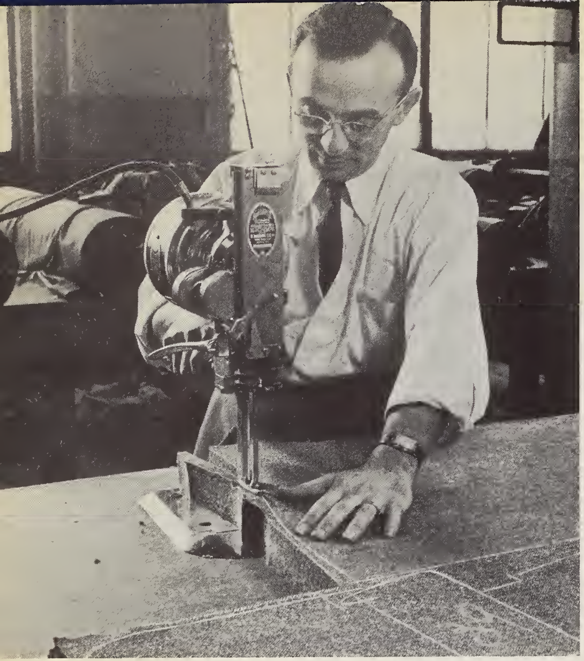
First a wonderful machine laid a strip of material on a long table, smoothly and evenly—just so. Then it put another strip of material on top of the first one. Then another and another until many strips had been laid. Did the machine know when to stop laying strips? No, but the man who ran the machine knew.

A worker laid a dress pattern on the top layer of the strips of material. He was careful to lay it so there would not be too much waste. He marked around each piece of the pattern. Then he would know just where the cutting was to be done.

A machine with a very sharp blade cut all around the pieces, following the mark. The blade had to be guided carefully, of course. When the cutting was done, there were dozens and dozens of pieces. Some would make the skirts of the dresses, some the sleeves, some the waists.

The stacks of pieces were then carried to the women who sewed them together. All the sewing was done by machines run by electricity. A woman sat at each one of these machines. She did not need to move from her chair, because the dress pieces were moved up to her.

One woman sewed a seam that helped to make the skirt of the dress. The next woman sewed another seam of the skirt. One woman sewed up the sleeves. Another one sewed the sleeves into the dress. At the end of the line of machines, that dress had been put together.



Botany-Daroff "500" Clothing

The sharp blade of the machine cuts through many piled-up layers of cloth.

Still there was more work to be done on the dresses. Buttonholes had to be made and buttons sewed on. All that work, too, was done by machines of different kinds.

The dresses were examined by inspectors who made sure that each one was made neatly. All of them were exactly alike. All were the same size. Perhaps the next group to be cut would be larger. Perhaps smaller.

Where did the dress factory get that pretty material of white with red dots dancing this way and that way all over it?

For the answer to that question you will go to a factory where cotton materials are spun and woven. Jill's dress was of cotton, you see.

The spinning and weaving of cotton materials are much like the spinning and weaving of materials of wool. The raw cotton is cleaned, but it is not washed. After the cleaning, the cotton is combed so that the fibers are smooth, almost straight. Then the spinning begins.

The fine fibers of cotton are spun into thread. The thread is wound on hundreds of spools. This thread is not strong like that which your mother uses to mend a tear in your clothing, or to sew on buttons. It is much finer and softer than that. You can see how soft and how fine it is if you pull a thread or two from a piece of cotton cloth. You remember how fuzzy a thread of wool is.

The spools are put on a machine called a loom. This does the weaving. The cloth that it weaves is white or nearly so, because the thread on the spools is white. If the cloth is to stay white, it is washed and then bleached; that is, it is made pure white. If it is to be colored, it is put into one or another of the vats full of dyes of different colors.

The white material for Jill's dress was run through a machine which stamped the red dots on it. Can you imagine white material going into such a machine? White, almost pure white, when it goes in. And when it comes out, red dots go dancing all over it this way and that way.

## *Where Cotton Grows*

Where did the cotton come from? Where did the factory get the raw cotton to spin and weave into cloth?

For that you must go to the warm, sunny South, where cotton is one of the most important crops.

In late winter or early spring cotton fields are made ready for planting. Farmers in many parts of our land cannot plow the ground in late winter. It would still be frozen or covered with snow, you see. But in the warm land where cotton grows, the ground never freezes so hard. In some parts it doesn't freeze at all.

Some farmers use plows drawn by tractors. Some use plows drawn by horses or mules. Whatever is used, the soil must be made soft and fine. A field ready for planting looks much like a giant flower bed.

Cotton seeds are about the size of small peas. But they are not round in shape, as peas are. They are oval or egg-shaped. They are brownish in color and covered with white fuzz.

The cotton seeds are planted by machines. Farmers who grow a great deal of cotton use big machines drawn by tractors. Those who have small farms use small cotton planters drawn by horses or mules.

The small planter looks something like an ordinary plow with a round bucket set on its frame. The seeds drop from the bucket as the plow makes a trench in the soft soil. Behind the bucket is a wheel which rolls over the ground and covers the seed. Once over the field, and the rows are all marked and the cotton seeds are planted and covered.

If the weather is warm, and it is very likely to be, little green shoots appear about a week after the planting. The big field is green with the tender young plants.

Very soon the plants must be cultivated. This means that the soil around them must be made loose so that the young plants can get water and food. On some farms the cultivating is done by machines. On others it is done with hoes.

While workers in the field cultivate the young plants, they hoe out the weeds and the grass that have sprung up. They also hoe out some of the cotton plants where they are growing too thickly.

After a while the plants become bushy. Then it is time to watch for the blossoms. They should begin to appear about the Fourth of July if the crop is to be good.

Cotton blossoms are shaped much like hollyhocks. On the first day they appear they are white, almost snow-white. Soon they turn pink and then red. At any of these times a cotton field is a beautiful sight. It looks like a gay flower garden.

A cotton blossom

Allen from Century Photos

An open cotton boll

While the blossoms are still on, a small green swelling appears at the place where the flower is joined to the stem. That swelling is the beginning of the boll in which the fleecy white cotton grows. By the time the bolls are the size of marbles, the flowers have wilted and have fallen to the ground.

At different times of the growing season, cotton plants must be sprayed. This is done to kill a very troublesome kind of insect called the boll weevil. It lays eggs in the boll. This causes the boll to shrivel and die. If there is no boll, then, of course, there will be no cotton.

Rain and sunshine make the bolls grow larger and larger. They grow to be about the size of walnuts. Then they begin to crack open in four or five places from the tip down the sides. Nothing inside the boll can be seen yet; that is, nothing important. One can see only a few short, damp threads which do not look at all like ripe cotton.

Each boll opens slowly as it becomes ripe. When it is entirely open, it is almost hidden by a fleecy white cloud of soft fiber. Then again the cotton field is a beautiful sight.

Most ripe cotton is picked by hand, and that is a long and tiresome job.

Many cotton pickers go to the field when the cotton is ready. They wear cool clothing, for the sun is hot. Some of them wear big hats to protect their eyes and to keep the fuzzy cotton out of their hair. Some wear little caps or tie scarfs over their hair. Each worker takes a row of cotton. Each one drags behind him a long sack into which he stuffs the cotton.

Down the long rows go the workers, picking and stuffing, picking and stuffing. The sun shines bright and the air is hot, hot. The work is hard. Still, there are some pleasant things about it. It is pleasant to be outdoors. The pickers can talk to one another as they go down the rows. Sometimes they sing old songs.

The cotton in a field does not all ripen at one time. The first picking is done about the middle of August. A few weeks later pickers go over the field again. And still the pods have not all ripened. Many fields are picked three or four times. Sometimes the last picking is done in the latter part of November.

You might think that all the bolls would be allowed to stay on until the whole crop is ripe. Then the picking could be done all at one time. That will not do, however. Every boll should be picked soon after it ripens. Dust and rain would spoil the white, fleecy cotton if it were allowed to stay long on the plant.

When a picker has filled his sack, he carries it from the field and has it weighed. He is paid by the number of pounds picked. Cotton is so light that it takes lots and lots of cotton to make a pound. Cotton-picking machines of different kinds have been tried, and some work well.

One by one the long sacks of cotton are emptied into a wagon with a wide base and high sides. What fun for the children when the cotton is dumped into the wagon! Especially for children on a small farm.

They climb over the high sides of the wagon. They tramp down the cotton with their bare feet. No one says, "Don't do that!" because everyone knows it is well to have the cotton packed down as tightly as possible. The more tightly it is packed, the more the wagon will hold.

When the wagon will hold no more, it is hauled off to the cotton gin.

Picking cotton

*Ewing Galloway*

*Courtesy Cotton Textile Institute*

The pickers are having their long sacks of cotton weighed on the big scales. Then they load the cotton into wagons with high sides. Each wagon waits in line outside the building where the cotton gin is. Soon you will find out what the big long pipes are for.

*Ewing Galloway*

The cotton gin is a machine for removing the seeds from the fibers.

Once, years ago, such work was all done by hand. It was not easy to separate the seeds from the fibers. It took a long time to clean only a pound of cotton. Many workers were needed many hours to take the seeds from a whole cotton crop.

Then a wise man invented the cotton gin. After that, planters raised more and more cotton. Ever since the first gin was invented, machines of its kind have been used. The cotton gin used today is very different from the first one, because many improvements have been made.

Cotton seeds are not thrown away. They contain an oil, which is taken from them and used in cooking and in other ways, too. A meal is made from the seeds after most of the oil has been taken out. The meal is fed to cattle and hogs in many parts of our country where cotton cannot be grown. Do you know of any farms where cottonseed meal is fed to the animals? Does your mother use cottonseed oil in cooking? By asking questions, you may find out about other important uses of cottonseed oil.

Now to get back to that wagon load of cotton. Just suppose that you are visiting a farm where cotton has just been picked. You would like nothing better than to climb on the wagon and ride to the gin on top of the load.

Away you go then. If you wish, you may make a soft bed for yourself. The cotton tickles your ears and gets into your nose. It sticks to your clothing. But you don't mind any of these things as you go rolling along in your big, rumbling chariot.

The warm sun shines down on you, and by and by you get sleepy. When you are about to sail away into dreamland, the driver calls "Whoa!" to the mules. You have come to the building where the cotton gin is.

It is a long, low building. Other big wagons loaded with cotton have reached it ahead of you. You can lie on your soft bed a while longer.

By and by your wagon moves forward to the building. You get off quickly, for a huge pipe is being lowered into the wagon. The pipe is shaped something like a stovepipe, but it is much larger. It sucks up the cotton just as you, later on, will suck cool lemonade through a straw.

## *Where Cotton Goes*

What becomes of the cotton? The pipe goes through a wall of the building. Inside is the gin, you remember. That pipe is sucking the cotton into the gin.

You walk around to the door of the building. You go inside. You find yourself in an enormous room. The floor is almost covered with little fluffy curls of cotton. The slightest puff of air blows them about like snowflakes.

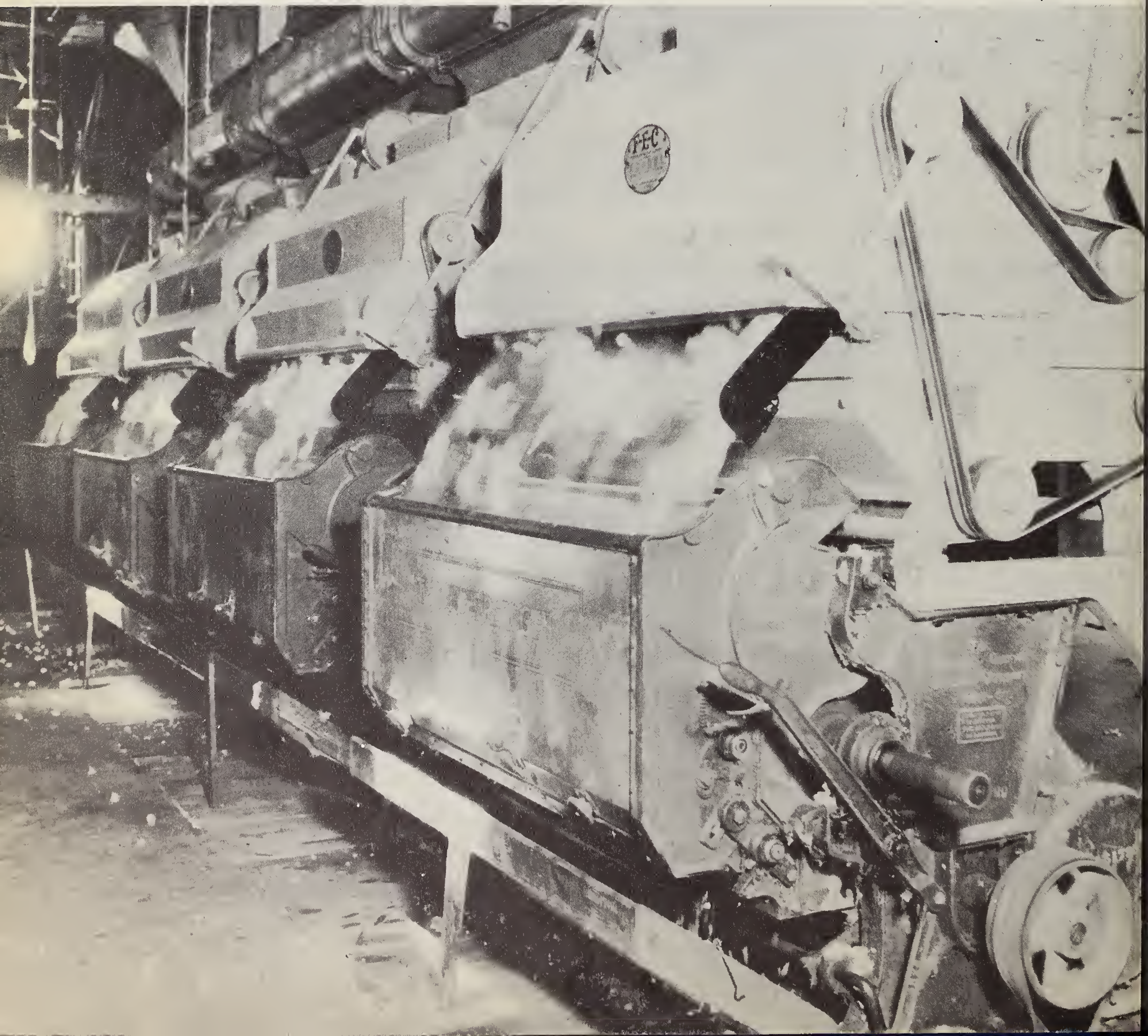
You see big, boxlike things that look as if they might be cookstoves for giants. But they aren't. They are the cotton gins.

Inside the gins are wheels, big wheels and little wheels. Inside the gins are prongs and tiny saw teeth. All these are parts of the gin. They work together, each part doing its own work. Together they take out the seeds of the cotton. Then they push the seeds out in a heap. They push the soft, fleecy cotton out, too.

When the cotton has been seeded and cleaned, it goes down a long pipe and into a baler. That is the machine which presses the fleecy stuff into great, heavy, solid bundles, or bales. This pressing, you see, makes

These are the cotton gins, the big machines that clean and seed the cotton.

*Philip Gendreau*



it possible to put a great deal of cotton into a very small space.

And now comes an exciting time for you. Soon you will find out how much your bale weighs. A boy or a girl on a cotton farm, large or small, is very much interested in the crop. Just as Bobby was interested in the wheat harvest. Or as Sam was interested in the orange crop. Or as Johnny was in the cattle his father raised on Three Trees ranch.

After a time your great bale of cotton comes from the pressing machine. How much does it weigh? Will you guess? Do you guess fifty pounds? a hundred pounds?

No, neither of these guesses is high enough. Most bales weigh about four hundred fifty pounds. This bale is a good one, a great big one. It weighs almost five hundred pounds.

"Just four hundred ninety-eight pounds," says the man who weighed it. "That's very good."

Now, very happy and pleased, you get into the big, empty wagon. And how empty it seems! You go to a confectionery near by and suck your cool lemonade through a straw. You go to other stores and buy a few things that are needed out on the farm. Then you get back into the wagon and go rumbling back to the farm.

What will happen to that big bale of cotton? First it will be taken to a warehouse. From there it will be loaded on a freight car. The freight car will go gliding over steel tracks to a factory somewhere in our land. Here the cotton will be made into cloth. Some factories are in the South near the fields where cotton is raised. Some are in the North, some in the East.

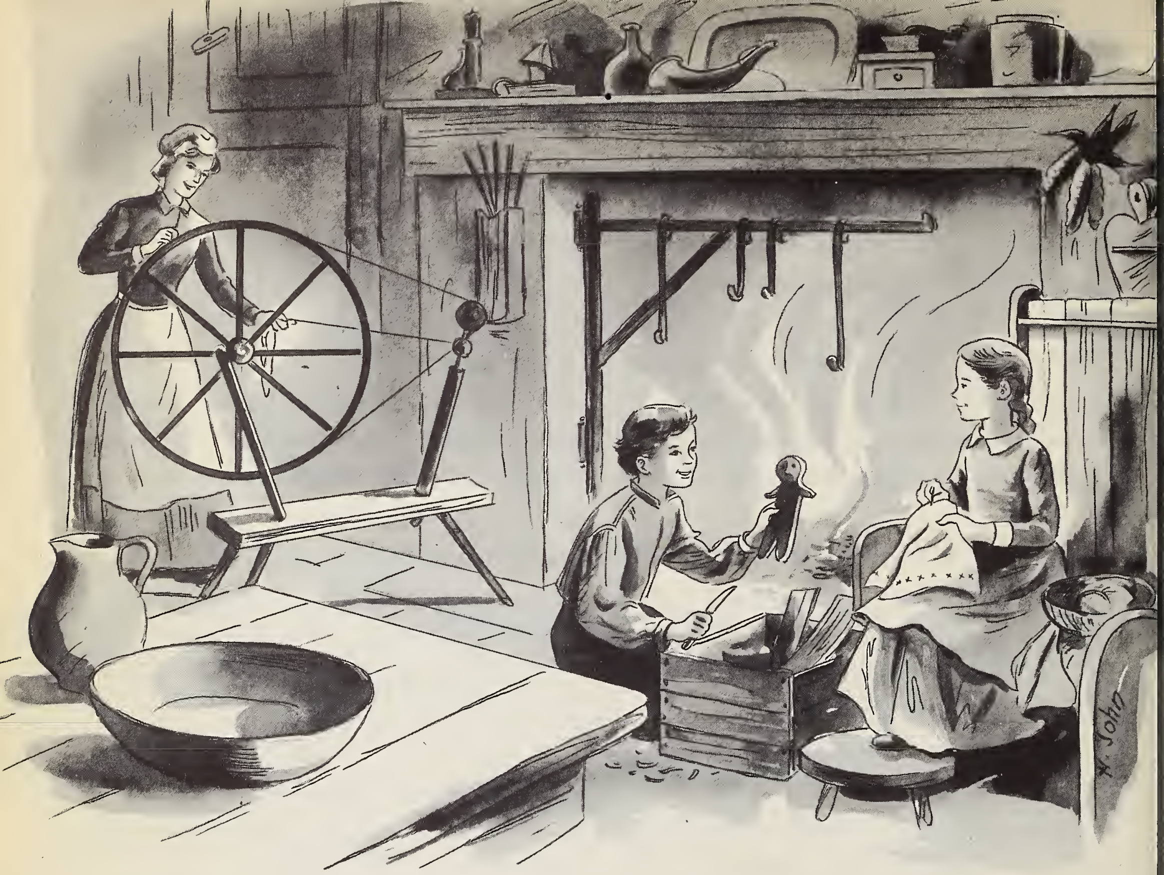
Men from the factories buy the cotton. They buy by telephone, by telegraph, by letter. And sometimes they go to the warehouses to choose the cotton themselves.

You use many things that are made of cotton. How many workers, do you think, helped to make these things? That is a question no one can answer. You will never know either how many people do all kinds of work every day to help you live comfortably.

Bales of cotton

Think of a cotton dress or suit that was bought for you. Perhaps you would like to tell about it in class. Try to imagine the work done to make that garment. Tell about the work as you imagine it.

Make a list of other things besides clothing that are made of cotton.



# NOW AND LONG AGO

## *A New Suit for Jonathan*

Wool clothing for warmth. Cotton clothing for coolness. A fuzzy warm sweater for days that are cold. A dress or a suit of cool cotton for days that are warm. The weather helps you decide what to wear when you dress in the morning. Often before the day is over you decide to put on something warmer or cooler.

It is pleasant to choose clothing that will be right for the weather. Yet people have not always been able to do that. There was a time when a great many people had to wear what they could spin and weave for themselves. Or what could be spun and woven in their own community. They hadn't much choice, you see.

You remember that people of long ago didn't have much variety in the foods they ate either. They had only what they raised themselves or what was raised near by. That was because food could not easily be sent from one place to another.

Why did people have to depend on what was raised and what was made in their own communities? It was because there were not many roads in our country, and there were no good roads. For a long time there were no railroads, you know. When railroads were first built, they were very short lines. They ran only from one city to another a short distance away. Many communities were far, far away from such roads.

Cities and towns had small workshops or factories where spinning and weaving were done. Fine fabrics were spun and woven. Among them were silk, satin, and velvet, and cotton, woolen, and linen cloth.

The machines that did the spinning and weaving were all very simple. They were run partly by hand. They were not much like the wonderful, magical machines of today.

Much of the spinning and weaving of cloth was done right in the homes. Nearly every family had a spinning wheel. Many homes had simple looms for weaving. All sewing had to be done by hand because machines for sewing had not yet been invented.

Can you imagine how it was? Perhaps you would like to pretend to go back, back, back, a hundred years or so. Then you can see for yourself how some clothing was made in your great-great-great-grandmother's time. Here we go, back to that time.

A little boy named Jonathan needs a new suit. He has only one warm suit and that is too small for him—much too small. Besides, it is nearly worn out. He can get along very well with a shirt and trousers when the weather is warm. But by the time the cold weather comes he must have something warmer to wear.

"Maybe I can make you a suit out of this old coat of Father's," says Mother, looking the coat over.

Jonathan hopes not. The suit that he now has was made from a pair of Father's old trousers. Jonathan would like a suit of new cloth—of cloth that has never been worn before.

Jonathan is happy when he hears Father say, "That coat is too good to cut up. Can't you make some new cloth for Jonathan?"

Mother says she can. So Father brings some wool from the barn where it has been stored since the shearing. Mother washes the wool in strong homemade soap. She hangs it where it will dry quickly.

Mother carefully combs the wool. Then she begins to spin the yarn. She spins until bedtime. She winds up the yarn. The next night and the next and the next she will go on spinning. It takes many hours to spin enough yarn for Jonathan's new suit.

One day Mother decides that she has enough yarn. More than enough. She makes a dye out of butternut hulls. Then she dips the yarn into the hot dye. She turns it over and over so that it will dye evenly. At last it is a good, deep brown. That is a good color for Jonathan's new suit. It doesn't show soil.

After the dyeing, Mother rinses the yarn again and again. She hangs it where it will dry quickly.

When it is dry, she takes it to the loom that stands by the window. She strings the loom with some of the yarn. She winds some of it on her shuttles. Then she begins to weave.

She works at the weaving until it is time to get supper. She weaves again after supper by the light of the candle. She weaves again the next day and the next. It takes many hours to weave enough homespun cloth for Jonathan's new suit.

One day Mother takes the homespun cloth from the loom. "This is surely more than I'll need," she says to herself. "Maybe I'll have enough cloth left to make Patience a cape." Patience is Jonathan's little sister.

Mother takes a small roll of brown paper from a drawer in the big chest. She unrolls the paper. There are several pieces of it. It is the pattern for the coat and the trousers of Jonathan's new suit.

She lays all the different pieces of the pattern on the homespun cloth. Carefully, carefully, for there must be no waste. She sews the pieces of paper fast to the cloth. Why doesn't she use pins for this? Mother has no pins to use. Pins were new in the world in that long-ago time. They were very expensive. Only people with plenty of money to spend could afford to buy pins.

Mother cuts carefully around all the pieces. She saves all the little scraps for patches. Knowing Jonathan, she thinks that his suit will need to be patched soon.

When the cutting is done, the sewing begins. Every stitch of that suit has to be sewed by hand. Mother has to make very small stitches, so that the pieces will hold firmly together. She has to make many buttonholes and sew on many buttons. Knowing Jonathan, she uses strong thread for sewing on the buttons.

What a long time Mother works—washing, combing, spinning, dyeing, weaving, cutting, and sewing! No wonder she will say many times, "Jonathan! Jonathan! Do be careful of your new suit."

Mother has enough cloth left to make a little cape for Patience. She wishes now that the cloth were some

Helen John

The new clothes

brighter color than brown. She thinks that is a very dark, dull color for a small girl to wear.

She takes a blue dress from the big chest. She holds the brown cloth close to the dress. "M-m-m!" she thinks. "The two colors look pretty together." She takes out a small roll of blue cloth from the chest. It was left over when the dress for Patience was made. "I'll line the cape with this blue," she thinks. "Lining will make it much warmer."

For several days, when she has time for sewing, Mother works at the cape. She calls Patience to try it on. Then Patience tries on the blue dress, which she has not worn since last winter.

"Oh, dear!" Mother says. "Your dress is too short."

Little girls in that day wore their dresses almost to the floor. The hem will have to be let down, and then the dress will be all right again.

When this has been done, Patience puts on the blue dress again. Very proudly she puts the new cape over her shoulders. "Now Jonathan and I are twins!" she says happily. "He has a brown suit. I have a brown cape to match." She dances about, her pigtails bouncing up and down.

Now Jonathan and Patience are ready for winter. The suit is not very warm. The cape is not very warm either. Every time the family goes to town in the big wagon, Patience will have to wear one of Mother's big shawls over her dress and cape. And Jonathan? Jonathan will have over his shoulders Father's old coat!

If you know a good story about the making of clothing long ago, tell or read it to the class.

When your mother has sewing to do, very likely she gets out her sewing machine. Very likely that machine is run by electricity. Can you tell how many kinds of sewing she can do on that machine? Do you know how long people have had such machines? Perhaps you can find out.

# *New Clothes Today*

Now let's stop pretending that we have gone back, back, a hundred years or so. Let's think about the wonderful machines in factories that make our clothing today.

There are machines that comb fibers, and machines that weave fibers into dozens of different kinds of cloth. There are machines that put down layers of cloth, all ready for cutting. There are other machines that cut these layers of cloth into pieces. And there are machines that sew the pieces together.

Wonderful machines! Magical machines! Each machine does its work quickly and smoothly. If you could watch one of them working, you might almost believe it could think. You might almost believe it knew exactly what it was doing.

Yes, you might believe that, almost. Yet you know, of course, that no machine would be of any use all by itself. Every machine needs someone to care for it while it is working. Every machine needs care even when it is not at work.

Perhaps you know, too, that machines would be of no use without the power that runs them. Some are run by water power, some are run by electric power. And some are run by the power of steam. Very few machines are run altogether by hand.

All the pretty and useful garments would be of no use if they stayed in the factories where they are made. Trucks and trains and airplanes carry the garments from factories to wholesale stores. Trucks and trains and airplanes carry them from wholesale stores to little stores and big stores all over our land.

You go to the stores to buy. Often you have so many things to choose from that you can hardly make up your mind what you want. Some day, while you are shopping, stop to think of the many people who have worked to make the things you buy.

Suppose you lived in a place where there were no trains, no trucks, no automobiles, no airplanes to bring you different things from far-away places. What clothing materials would you not be able to get? To answer that question, you need to find out what is made in your own community, and what is brought in from outside.

Suppose you could have only one kind of clothing to wear, day after day, year in, year out. What would you choose? Can you tell why?

# MORE CLOTHES

## *Clothing for Cold Weather*

People buy certain kinds of clothing to wear while they work. They buy certain kinds to wear while they sleep or rest. They buy other kinds to wear when they go traveling. They buy still other kinds to enjoy different kinds of sports.

So many different kinds of clothes to buy and to wear! Your great-great-great-grandmother would never have dreamed of such a variety. And yet, for all the variety, the weather has more to do with the choice of clothing than anything else. Did you ever think about that?

Suppose for a while you think about warm clothes. Almost at once you remember wool, about which you have read. Wool clothing is good to wear in cold weather. Yet fur is even warmer than wool.

A fur collar on your coat feels very comfortable when the winter winds blow cold and you can see your breath in the air. Your hands keep warm in a fur muff or in mittens of fur. Your ears keep warm under the tabs of fur on your cap.

Do you know where fur comes from?

Men in many parts of our country work all winter long hunting or trapping wild animals just for their fur. Men in other countries hunt and trap, too. And not all the animals are caught in winter. In some parts of the world the trapping goes on all the year round.

The animals are killed. Their skins are sent to factories. There they are made into warm clothing of many different kinds.

In some of the colder parts of our country, and in colder parts of other lands, too, men raise fur-bearing animals for their valuable skins. The animals run free on ranches enclosed by high wire fences. They are well fed and well cared for.

Almost as warm as fur clothing is clothing made of leather. A leather jacket keeps out the cold wind. A jacket of wool with a leather lining is almost as warm as a fur coat.

Gloves or mittens of leather protect your hands from the cold. Leggings of leather are good to wear when you go skating or coasting. In fine, warm weather you may wear thin shoes of cloth or even no shoes at all. When the weather is cold, however, you should have shoes of good leather with thick leather soles.

The hides of many different kinds of animals are used to make leather. Such work is done at the tanneries, you remember. From the tanneries the leather goes to hundreds of factories to be made into different kinds of clothing or into shoes.

Your jacket of leather, your leggings, your gloves are probably made of goatskin. The soles of your shoes are probably made of cowhide. The upper parts of your shoes are not so heavy as the soles. They may be made of kidskin or goatskin or calfskin.

Don't you think it would be fun to make a list of different garments made of leather? It would be even more fun to find out what kinds of leather have been used in the making. To do this, you may have to ask many questions in a clothing store. Plan to have a talk in class about the things you have learned.

# *Clothing for Warm Weather*

When you think of cool clothing, you think almost at once about cotton. Linen is even cooler than cotton, and it is the oldest kind of cloth in the world.

Thousands of years ago, people learned to spin and to weave linen cloth. Pieces of linen, little scraps of linen, woven long ago are still in the world today. No one knows, of course, when people first learned to spin and to weave. No one knows just how they did it. But everyone knows that spinning and weaving are done more quickly and more easily now than they were years ago.

Linen is made of the fibers of a plant called flax. The fibers are in the stem of the plant. Cotton, you remember, is made of the fibers of seed pods.

Some flax is raised in our own country. It just happens, however, that the fibers of the kind of flax raised in our own land are not very fine. They are not nearly so fine as those of the flax raised in some other parts of the world. For that reason flax is raised here mostly for its seeds. A useful oil is made from the seeds. Do you know what it is?

Though not much flax is raised here, much linen is spun and woven. The fibers are brought to our land in ships that sail the wide oceans.

Flax is raised much as wheat is. The ground is plowed, and the soil is made soft and loose before the seeds are planted. When the plants are small, they look much like wheat. They grow about as high as wheat; that is, about three feet high.

The plants put out blue flowers, lovely blue flowers. Imagine a wide field of flax in bloom. The wind is blowing, waving the blue flowers. The field looks like a lake.

Most flax is not harvested as wheat is. It is not cut with a binder and stored in barns or sheds as wheat is. If the flax stems were cut, a part of them would be wasted. The sap would run out, too. The sap is important because it helps keep the fibers soft and easy to bend.

Flax plants are carefully pulled. The soil is shaken from the roots, so that it will not get into the fibers.

After they have been pulled, the flax plants are dried for a week or so. The leaves and seed pods are removed, so that there is nothing left but the bare stems.

Now the outer parts of the stems must be removed. This is done by retting, and retting is another word for rotting.

Sometimes the retting is done by soaking the flax stems in water for a long time. Sometimes it is done by

Kaufmann & Fabry Company

This is a machine for pulling up flax plants. They are often pulled by hand.

spreading the stems out in a field. Rain and warm sunshine and dew soon rot the stems.

Even then little bits of the stems stick to the fibers. They must be removed. To remove them the stems are beaten and beaten. The beating is often done by hand with long sticks or rods. When the fibers are smooth and clean, they are packed into bundles and sent off to factories.

Linen is more expensive than cotton. That is partly because so much work has to be done to get the fibers ready for spinning and weaving.

Rayon is a cool cloth, too. It is made partly of the fibers of wood and partly of other materials. It can be spun and woven to look like cotton or linen. It can be spun and woven to look as shining as silk.

Cotton and linen are made from natural fibers; that is, the fibers grow naturally in plants. Men have only to take them out to use them. Rayon is an artificial fiber; that is, the fibers are made. Men make them in almost magical ways.

To make rayon, wood ground into tiny pieces and other materials are mixed together. The mixture is then heated until it forms a paste. The rayon fibers are spun from the paste.

When your mother was a little girl, people were just beginning to use rayon. So you see it is a new kind of cloth. You may think that your mother was a little girl a long time ago. Really, it wasn't so long ago. Remember that linen was first woven thousands of years ago. Then you will understand that rayon is a very new cloth.

Another and a still newer kind of cloth is nylon. It is made from artificial fibers, too. What do you suppose goes into the making of nylon? Coal is one of the materials. Doesn't it seem like magic that a cloth as lovely and dainty as nylon can be made partly from coal products?

Did you know that glass is spun and woven and made into a kind of cloth? Doesn't that seem like another bit of magic?

Garments of glass fibers are good for rainy-day wear because they are light and they shed water easily. Kitchen aprons of glass fibers are very useful. When they become soiled, they can be wiped off with a damp cloth. Do you know any other uses for cloth made of glass?

Perhaps your rain cape or rain coat is of plastic. It is soft and light, too, and it sheds water easily. Some plastic is made partly of flaxseeds and partly of beans of a certain kind. Other things, too, are used. Do you know other uses of plastics?

Silk was once one of the most important kinds of cloth made in this country. It is not nearly so important now as it once was. That is because many other kinds of cloth have taken the place of silk. Rayon is one of these. Nylon is another. They are almost as beautiful as real silk.

In some of your books or in books at the library, you will probably find stories about the making of silk. Read those stories and be ready to talk about them in class.

## *Rainy-Day Garments*

When your mother was a little girl, she probably had a rain coat or a rain cape of rubber. Maybe you have such a garment for rainy days, too. Rubber is still used for that kind of clothing, though other materials are taking its place. One of the reasons for this is that rubber is needed for so many other things.

Rubber is made from the sap or the milky juice of a certain kind of tree which grows well in hot, rainy parts of the world. Men get the sap by cutting grooves or gashes in the bark of those trees. They hang cups below the gashes to catch the sap as it flows out.

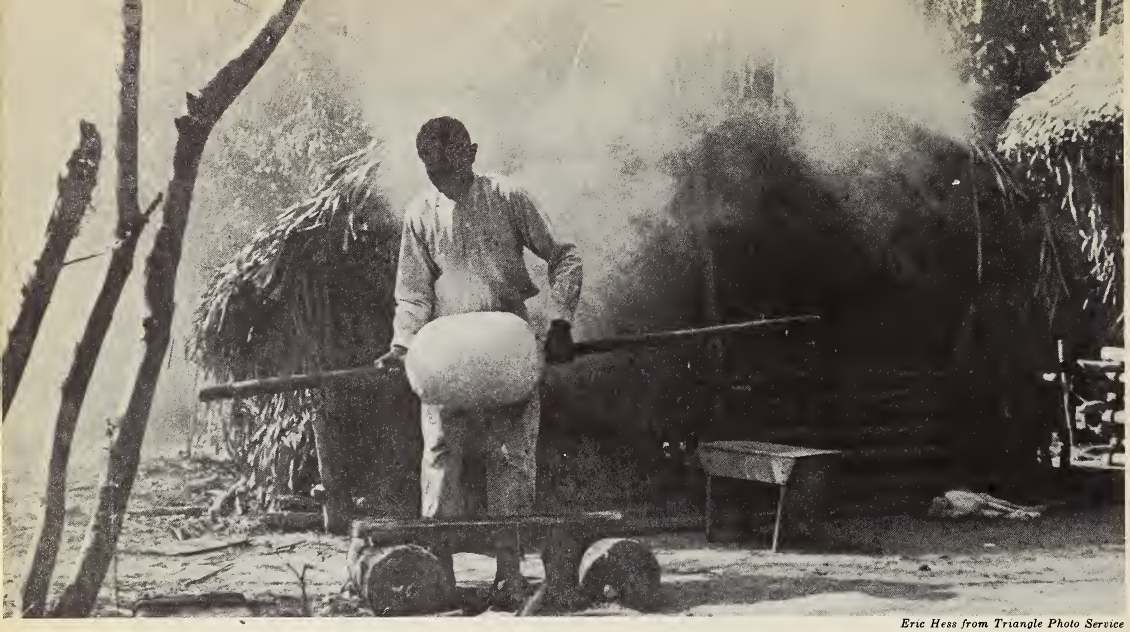
After a few hours men and women, even boys and girls, go from tree to tree to empty the cups of sap. The sun is hot, the air is heavy with vapor, and the work is hard.

After the sap is gathered, it hardens into rubber and is made into great balls. It is carried in one way or another to places where it can be loaded on ships. Sometimes it is carried on the backs of men, sometimes on the backs of animals. Sometimes it is hauled in cars or wagons over roads that are not much more than rough, narrow paths. Sometimes it is carried in small river boats. But it is all brought to certain places beside the sea, where ships come in and soon sail out again carrying loads of rubber.

Many such ships bring raw rubber to our own country. There are many

This man cuts a gash in a rubber tree so that the sap will flow out.

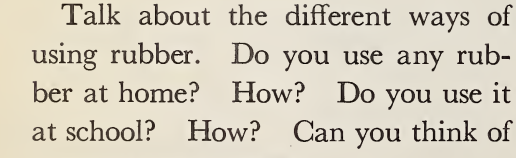
*Three Lions*



Eric Hess from Triangle Photo Service

Inside his smoky hut this man hardened the sap from his rubber tree into a big ball.

factories in our land where useful things are made of it. Perhaps the most important of these are the tires for automobiles and trucks. Do you know which of our cities have big tire factories?



Talk about the different ways of using rubber. Do you use any rubber at home? How? Do you use it at school? How? Can you think of other uses for rubber?

Here is an interesting thing for you to remember about clothing: All clothing that comes from the backs of animals is much warmer than that which is made from plant fibers. Think about the different garments you wear. Think of those you wear to keep cool and of those you wear to keep warm. Do you see that this is true?

Bring to school samples of different kinds of cloth. Mount your samples where you can look at them often. Label them carefully so that you will remember the name of each.

Save a space on the blackboard where you may write anything new you have learned about clothing. This will help you remember what you have learned. And it will help your remember how many people are at work every day making useful things for other people of the world.

# *Houses People Live In*

# HOUSES FOR ALL

## *People Build Houses*

Why do people build houses? Had you ever thought about that?

The answer is easy. People build houses to live in, of course.

Why do people want to live inside walls and under a roof? Being outside is pleasanter than being inside, isn't it? Outside, the sky is your roof and no walls shut you in. The air is fresh, the sunshine is bright. Why should people shut themselves in from fresh air and bright sunshine? Had you ever thought about that?

If you think for a moment, you will know that people build houses for shelter. If every day was just right, if no day was either too hot or too cold, if there were never any storms, perhaps people would never have learned to build houses.

In some parts of the world, however, many days are too cold for comfort out of doors. In other parts of the world many days are too hot. In most parts of the world winds come blowing out of the sky. They roll up clouds that bring rain, hail, or snow. Winds in some lands bring sand storms or dust storms.

So you can see that in some places people need shelter from cold. In other places they need shelter from heat. In some lands they need shelter from both heat and cold. And in most lands they need shelter from storms of one kind or another.

Think back to the time when you needed shelter and needed it badly. Perhaps you had gone on a fishing trip or a picnic up the river. Maybe you had gone to the woods to gather flowers or nuts.

When you started out, the weather was fine. There were no signs that a storm was coming. At least, if there were any, you did not think about them. You thought only about the fun you were having.

Suddenly strong winds sprang up. Dark clouds covered the blue of the sky. The sunshine was gone. You knew that a storm was coming.

You forgot about the good time you were having. You hurried toward home. Perhaps you decided that you could not get all the way home before the storm came. You took shelter wherever you found it, and stayed there until the storm had passed over.

Suppose you reached home before the storm came. You called to your mother to let her know that you had come safely home. She was glad. You were glad.

You went to the window and saw how the wind bent the trees and sent the leaves scurrying. You saw the rain splash down on the windows. You heard it beat down on the roof. You felt very safe and very comfortable inside the house.

You may not remember now just how safe and comfortable you felt. Still, it is very likely you do. People nearly always remember how good it is to find shelter from the cold winds and soaking rain of a storm.

How many kinds of houses are there? Had you ever thought about that? That question is not easy to answer. There are so many different kinds of houses in the world that you never could learn about all of them.

In some parts of the world people build houses of branches of trees and leaves. In other parts they build houses of earth. In still others they build huts of reeds and long grass. In very cold parts they build shelters of snow. There are places in the world where people live in tents made of animal skins. There are places where they live in houseboats year in and year out. These are only a few

Buch from Pix

This mother and her child live in a tent made of animal skins.

Burton Holmes from Ewing Galloway

A house of poles, with a grass roof

of the different kinds of houses there are in the world.

In some lands people go on living year after year in the same kinds of houses. They use the materials they have close at hand. They do not try to get other materials or to build better homes. They do not try to make their houses beautiful. They build only for shelter.

In our own land most people want more than just shelter from heat and cold and storms. They want houses that are pleasant to live in. They go on trying to find ways to make their homes pleasanter, more comfortable.

# *Materials for Houses Go Traveling*

Have you ever noticed the different kinds of homes in your own community? Perhaps one house is of brick. The one next door is of lumber. Another is partly of brick and partly of lumber. Another has walls of cement, with a roof of bright tile.

Some people like one kind of home and some like another. If the materials for building a house are not close at hand, they are brought from some other community.

That is why materials go traveling. They go traveling over smooth roads of cement, over curving dirt roads, over rivers and lakes, and over steel tracks. And sometimes they go over air roads.

There was a time when people had to be satisfied with what they had close at hand. That was before the days of good roads and railroads.

In those early days, you remember, people had only the foods they raised in their own fields and gardens. The clothing they wore was the clothing they made or could get near at hand. You have read how it was. You will not find it surprising that they built their homes of whatever materials they had at hand.

They built small houses, or cabins, of logs. The men cut down tall trees. Then they sawed the trunks into logs. They laid one log on another. Thus they made walls for the cabins.

They cut down more trees and sawed more trunks into logs. They split these into rough boards called clapboards. These clapboards they used for the roofs. They made floors of logs split in half. Some cabins had only the earth for their floors—earth packed hard and firm.

To this day a few of those old cabins still stand here and there in our land. But not many. Most of them were torn down years ago.

Where the cabins once stood, there are now houses of brick, of cement, of stone, of fine lumber. Let's see how this change came about. To do so, let's first go back to a log cabin that was built in your great-great-great-grandmother's day.

Before reading on, think of answers to these questions. Why do the people of your community need shelter? Do they need shelter from heat or from cold or from both? What kinds of homes do the people build? What kinds of storms do the winds bring to your part of the world?

# A LITTLE LOG CABIN

## *The Journey toward a New Home*

Once upon a time, many years ago, the Brown family lived in the eastern part of our country on a very small farm.

Father Brown thought their farm was too small. So did Mother Brown. And so did the two Brown children, who listened while Father and Mother Brown talked. They all thought their farm was too small.

They wanted to raise more wheat and more corn and more hogs and more cattle than they could raise on their own little farm. After much talking and planning, they decided to go to the wide, wide lands toward the west. There, they had heard, they could buy a large piece of land.

Other people before them had gone to the new lands toward the west. They had sent back letters telling about the good soil, the wide streams and rivers, the deep woods. The more the Brown family heard, the more excited they became about going.

Of course they knew they would have to leave all their old friends. They knew they would have to go on a long journey. They knew they would have to work harder than they ever had worked before. They knew they would have to build their own home. But still they wanted to go.

"You know, Prue," Andrew said, "I'll be helping Father cut down the trees to build our new home." Andrew was the boy of the family. He felt very important because he was older and bigger than Prue.

Prue's real name was Prudence. That is an old-fashioned name meaning "carefulness." Mother and Father thought Prudence was a very fine name. But Andrew was always in too much of a hurry to use such a long name. He just said Prue.

"I'll help Father cut down the trees to build the log cabin we'll live in," Andrew boasted to Prudence. "I'll help him saw the trunks into logs. Very likely I'll help him put up the walls."

Prue thought for a moment. Then she said, "I'll help build the cabin, too. You'll see, Andrew."

Andrew didn't think little Prue could help much, and he said so. There might have been quite an argument if Father had not appeared just then. He settled everything by saying, "Of course Prudence will help. Everyone in the family will help build our new home."

One pleasant day in late winter the Brown family got up earlier than usual. Father and Andrew hitched strong oxen to a big covered wagon. Inside the wagon were extra clothing, some food, and all the furniture that could be safely packed in. So many things had been put into that wagon that there wasn't much room left for the Brown family.

Father and Mother and Prudence got into the wagon. Father spoke to the oxen, and the journey to the new home began. Friends waved good-by and wished them good fortune.

Andrew walked behind with the two cows that the family was taking along. He wouldn't walk all the way, to be sure. After a while he would get into the wagon and drive. Then Father would walk. Mother and Prue would take their turns, too.

The first few days of the journey were pleasant enough. The roads were not good as we know good roads. Still, they were good enough to allow the oxen to move along easily at a slow, steady gait. And the big, heavy wagon rolled smoothly along.

After several days there was no longer a road—only a trail. Other families had helped make that trail, but no one had traveled over it comfortably. The oxen stumbled over rough places, the wagon jolted and bounced and almost toppled over.

Every day in the late afternoon Mother would begin to watch for a good place to cook supper and camp for the night. The place must be near a stream. You can see why.

When a camping place had been found, Father called "Whoa!" to the oxen. He unhitched the animals from the wagon so that they might rest. They would feed on the grass near the camp. Andrew milked the cows. Mother built a fire, and then she and Prudence cooked supper.

After supper everyone lay down to sleep. When the weather was fine, the family slept under the stars near the camp fire. When the weather was bad, they slept in the wagon.

How long the journey lasted no one can say now. It must have been days and days, weeks and weeks. Only the family knew how long they traveled in the big covered wagon. Mother and Prudence wrote down the names of the days as they passed: Monday, March 1—Tuesday, March 2—Wednesday, March 3. And so on.

No matter how tired Mother and Prudence were at night, they never forgot to put down the names of the days. "If we don't do this," Mother said many times, "we soon won't know where we are in the year."

Andrew said, "We wouldn't even know when it's the irst Fourth of July."

Over rolling hills and over steep hills rumbled the wagon. It rumbled through forests and splashed across shallow streams. Where the trail led, the Brown family followed.

One day, near evening, they came to a beautiful place near a wide stream. "I wish we could stay right here," Mother said. "This would be a good place to live." Father agreed. So did Prudence and Andrew.

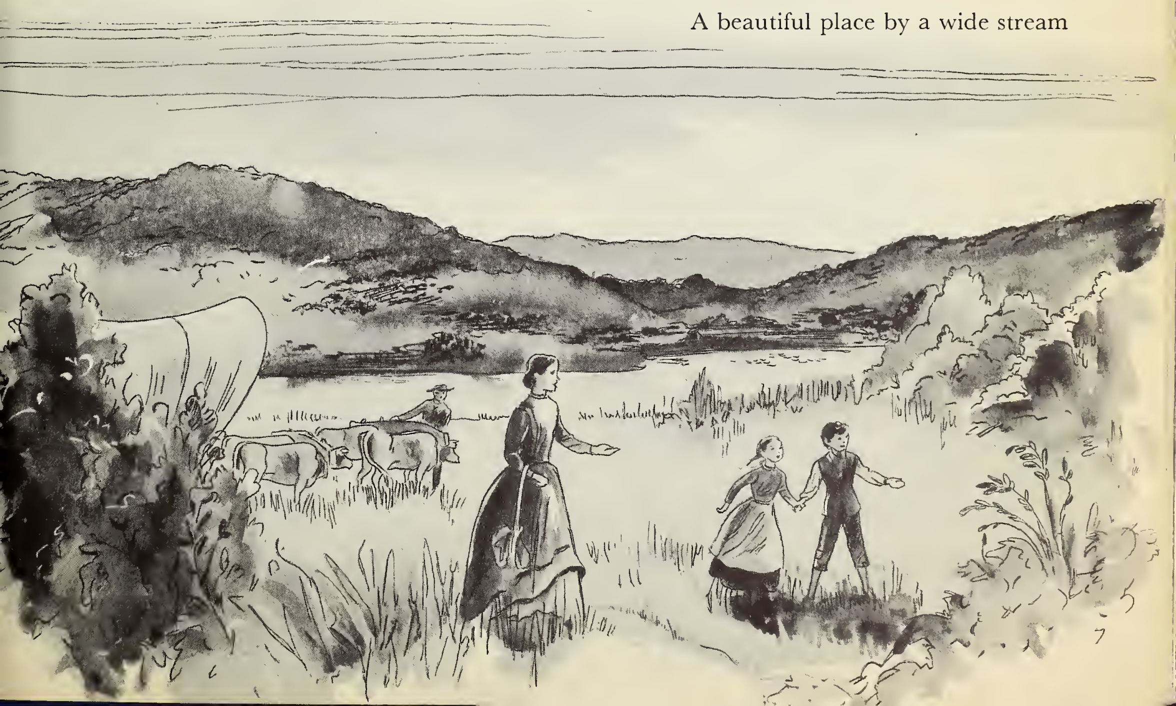
"We'll camp here for the night," Father said. "Then I'll make sure that no one else has chosen this land to live on."

No one had chosen it, as it happened. So the Brown family settled down on that beautiful spot, and that was the beginning of their big, widespreading farm.

Prudence had supposed that the building of the new home would begin right away. Even Andrew, wise as he was, had supposed so. But Father and Mother said, "No," and Father explained. "We must plant crops first. We have to have food, whether we have a house to live in or not."

Part of the new farm was covered with woods. Another part was covered with bushes and weeds. Near the stream was a grassy meadow dotted with wild flowers. This will be our first field," Father said. "We won't have to do so much work here to get the soil ready."

Still, it was not easy to get that soil ready for planting. The grass was thick and its fine roots held fast to the ground. The oxen strained and strained with all their might to drag the plow through the soil.



A beautiful place by a wide stream

When only a little part had been plowed, Mother and Andrew and Prue began their work. They hoed and dug at the soil. They hoed and dug and raked until their arms ached and their hands were badly blistered.

But, with all their hard work, they could not make the soil soft and fine like that of the fields in the little farm they had left. The new farm was new ground. It had never been plowed before. "In a few years," Father said over and over again, "this ground will look better."

The day's work began long before sunrise and lasted until the sun was low in the sky. Then the cows had to be milked and supper had to be cooked. Sometimes, as the Brown family sat around the fire, they felt homesick and lonely.

One day a stranger appeared in the field. "Turner is my name," he said. "I'm your neighbor. I live about four miles from here. I heard that a new family had settled in this place. I've got my planting all done, so I've come to help you."

Again and again the Brown family thanked Mr. Turner. After that the work was easier and the homesick and lonely feelings were gone. They had a friend in the new land!

When the ground in the new field was ready at last, the seeds were brought out for the planting. There

Getting the soil ready for planting

was corn for the family and for the animals. There were potatoes, pumpkins, squashes, and beans. Last of all Mother planted some flaxseeds. From the fiber of the flax plants she would spin thread and weave cloth.

## *Building the New Home*

When the planting was done, the work on the house began. Father and Andrew began cutting down trees to make logs. One day Mr. Turner came into the woods. This time he brought other neighbors. "We've come to help get the logs cut for the house," Mr. Turner told Father. "The folks around here like to help one another."

"That's a good way," Father said. "And we're all very thankful to you." They really were very thankful.

Mother and Prudence didn't help with the chopping and sawing. But they did something else that was very important in the building of the cabin. They whittled bits of wood into pegs. The pegs were about as large as the nails that are used to hold big pieces of lumber together. Of course, there were no stores near by where such nails could be bought. That's why pegs were used.

One evening beside the fire Father and Mother were talking about the size of the cabin. "Let's make it as wide and as high as we can," Mother said. "We want the children to have plenty of room to grow in." Mother was always saying things to make the rest of the family laugh.

"Where shall we build the cabin?" asked Father.

"Let's put it as near the trail as we can," Mother said. "I like to see what goes on in the world."

Father laughed. "As if you could see much of the world here!" he said. Surely there wasn't much of the world to be seen from the place where the cabin would stand.

Soon after that Father made a wonderful discovery. He found a spring on the farm. From the ground bubbled water—clear, cold, pure water. That was a wonderful discovery. It was quickly decided that the cabin would be built near the spring.

Mother tried hard not to seem too disappointed. "It's so very far from the trail," she said. "We'll never see anyone so far from the trail."

"More and more people are coming out here to live," Father said. "Maybe some day a road will run right past our door. Who knows?"

A day was set for the building. Early one morning many neighbors came to the Brown farm. Some came in wagons. Some came on horseback. Some walked. Many brought their families. All of them brought good things to eat. It was just like a

Neighbors helped with the building

picnic except that everyone but the smaller children worked hard all day.

The men went to the woods and brought the logs that had been cut. Then the building began. First two men laid a log where the front of the cabin would be. Then they laid a log where the back of the cabin would be. They laid logs across the ends of the front and back logs.

Some of the men marked the side logs where they crossed the front and back logs. And other men chopped notches at the marked places. The notches were just wide enough to fit over the front and back logs. They helped hold the logs in place.

Log upon log the walls rose. Soon they were higher than Prue's head. A hole for the fireplace was cut in one end of the cabin. An opening was left for the door. A smaller opening was left for the window.

When the walls were just a little higher than Father's head, they were high enough. That is, they were high enough at the front and the back of the cabin. But more logs would be needed to build in the sides.

Shorter logs were used to build in the sides. The higher the sides grew, the shorter the logs that were used. The logs were so short after a time that they came to a peak near the top.

A ridge pole was laid from the peak of one side to the peak of the other. That was the beginning of a roof. Rafters were laid from the ridge pole to the front and back walls. These rafters helped form the roof. They were made of the trunks of small trees. By the time a few rafters had been laid, it was late afternoon and everyone went home.

After this, Father and Andrew had to work on the cabin alone, though now and then a neighbor would come to help. They placed poles like the ridge pole, only smaller, all the way down the slope of the roof. The poles were laid close together and were covered with clapboards. These were put on so that they overlapped and thus they shed rain.

Nowadays people use shingles of wood or tile or slate to make roofs for their homes. But in those long-ago days such materials were not to be had in the new lands.

Mother had hoped that the big chimney for the fireplace could be made of field stones. But Father said it would take too long to gather enough stones. So he made the kind of chimney his neighbors had built. He used short poles, laying them up in much the same way that the logs of the cabin were laid. He covered

the chimney with clay inside and out, so the poles would not catch fire.

He made a door of clapboards and hung it on hinges of wood. He made a shutter for the window and hung this on hinges of wood. When the weather was warm, the shutter would be left open. But when it was cold, the shutter would be kept tightly closed. Then the cabin would be dark except for the light from the fire.

Mother said, "I'll grease strong paper and fasten it to the window. That will give us more light." It was fortunate that they had brought some strong paper from their old home, else they wouldn't have had any.

Last of all the floor was laid. Logs split in half were used, round side down and flat side up. The logs were fastened firmly in place with the wooden pegs that Mother and Prudence had made.

When the floor was finished, the family moved into the house. You can't imagine how delighted everyone was. Father promised to make some furniture—a table, a bench, a stool or two, and maybe some other pieces if he wasn't too busy.

And still there was more work to be done on the house. The walls had to be "chinked." Very likely that means nothing at all to you. Chinking was a kind of rough plastering that was done on the outside of a log cabin. It kept out some of the rain and the cold. One of the neighbors explained just how the chinking was to be done. Mother and Prudence followed his directions.

First Prudence gathered many small scraps of wood. That was easy to do because there were plenty of scraps made by all the cutting and sawing and chopping. She pounded many scraps between the logs.

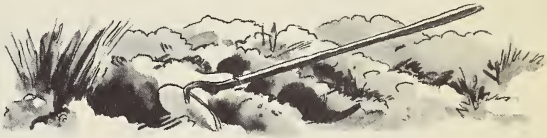
Mother had mixed water and clay. The mixture was about as thick as a good mud pie. Prudence dipped her hands in the mixture. She pushed handfuls of it all around and over the bits of wood. She used a smooth stone to pound in the soft clay.

She pushed and pounded and she pounded and pushed. Then she ran inside to peek between the logs to see if the light still showed through. If it did, she knew she had not filled all the spaces. Then she ran outside and began pounding and pushing again. Mother helped when she had time. They talked as they worked.

"My! My!" Mother said. "We'll be so busy this winter. We have to make soap and candles, too. There's spinning to do. There's weaving to do. And sewing and what not!"

"But we'll have good times, too, won't we, Mother?" asked Prudence. She was thinking of the children who had come to the Brown farm on the day the cabin was built. She was thinking especially of seeing her new friend Patience Turner again.

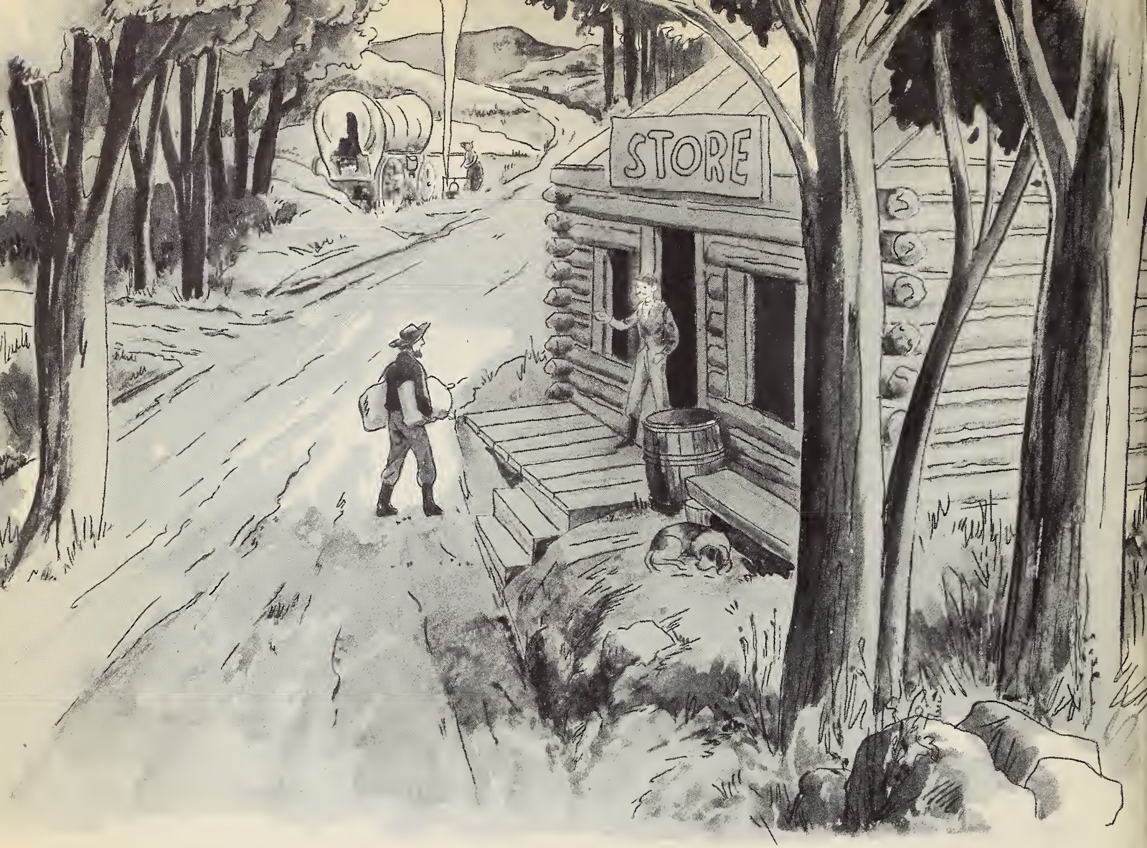
"Yes," Mother said. "We'll have good times. We'll invite the neighbors in to see our new home when the chinking is done. And we'll go visiting, too. Everyone has been friendly to us and we want to be friendly, too."



What do you think was the most difficult thing the Brown family had to do when they reached their new farm? Why? What do you think was pleasant about their way of living?

Of what materials do people build houses? Why did the Browns use logs and not some other material for their cabin? What are some of the things in your kitchen that the Brown family didn't have?

"Chinking"



# HOW THINGS GREW

More and more families moved toward the west. They moved for the same reason that the Brown family had. They wanted larger farms so they could raise more wheat and more corn and more hogs, sheep, and cattle.

Some of the families followed the trail that the Brown family had followed. But some took other trails. Many trails came from different directions. Sometimes two of these winding roads crossed each other. There was such a crossing several miles from the farm of the Brown family. Many people stopped at this crossing to rest or to camp for the night.

After a while someone thought that the crossing would be a good place for a store. The small store that was built was of logs. Its windows were narrow, its door and its roof were of clapboards. No matter. It supplied many travelers and settlers with the things that they needed.

Not very long after that someone thought the crossroads would be a good place for an inn. The inn that was built was also of logs. After it had been built, more and more people stopped at the crossroads to rest and to get something to eat.

One day a blacksmith and his family stopped at the inn. They had come from the East in a big covered wagon. The blacksmith was looking for a good place to make a living for himself and his family. When he saw the inn and the store, he thought he had found just the right place.

He knew that travelers often needed shoes for their horses or new wheels for their wagons. Settlers near by often needed to have their farm tools mended or to have new ones made. The blacksmith could put shoes on horses. He could make and mend tools. "There will be plenty of work here," he said to his wife. So he set up a shop not far from the inn.

Soon after that a miller and his family stopped at the inn. They, too, were looking for a good place to settle. The miller walked down to the bank of a near-by stream. He saw that the swift water could be made to turn a mill wheel. He looked at the new corn fields, the new wheat fields.

"I feel sure that I can make a good living here," the miller said to his wife. So he built a flour mill on the bank of the stream.

More and more settlers came. They built little cabins of logs. Everyone knew that using whole logs to build the walls of a cabin was wasteful. One log didn't go very far toward building a wall. But that same log could be sawed into many boards which would go much farther.

Yet people had to use whole logs for their walls. There was no way of sawing them into boards excepting with hand saws. Sawing by hand took a long time, and it was very hard work. A sawmill was needed.

In time such a mill was brought to the crossroads. Very soon the big saws were whizzing, turning piles of logs into great stacks of lumber. Now at the crossroads were a store, an inn, a blacksmith's shop, a flour mill, and a sawmill. The crossing had become an important place.

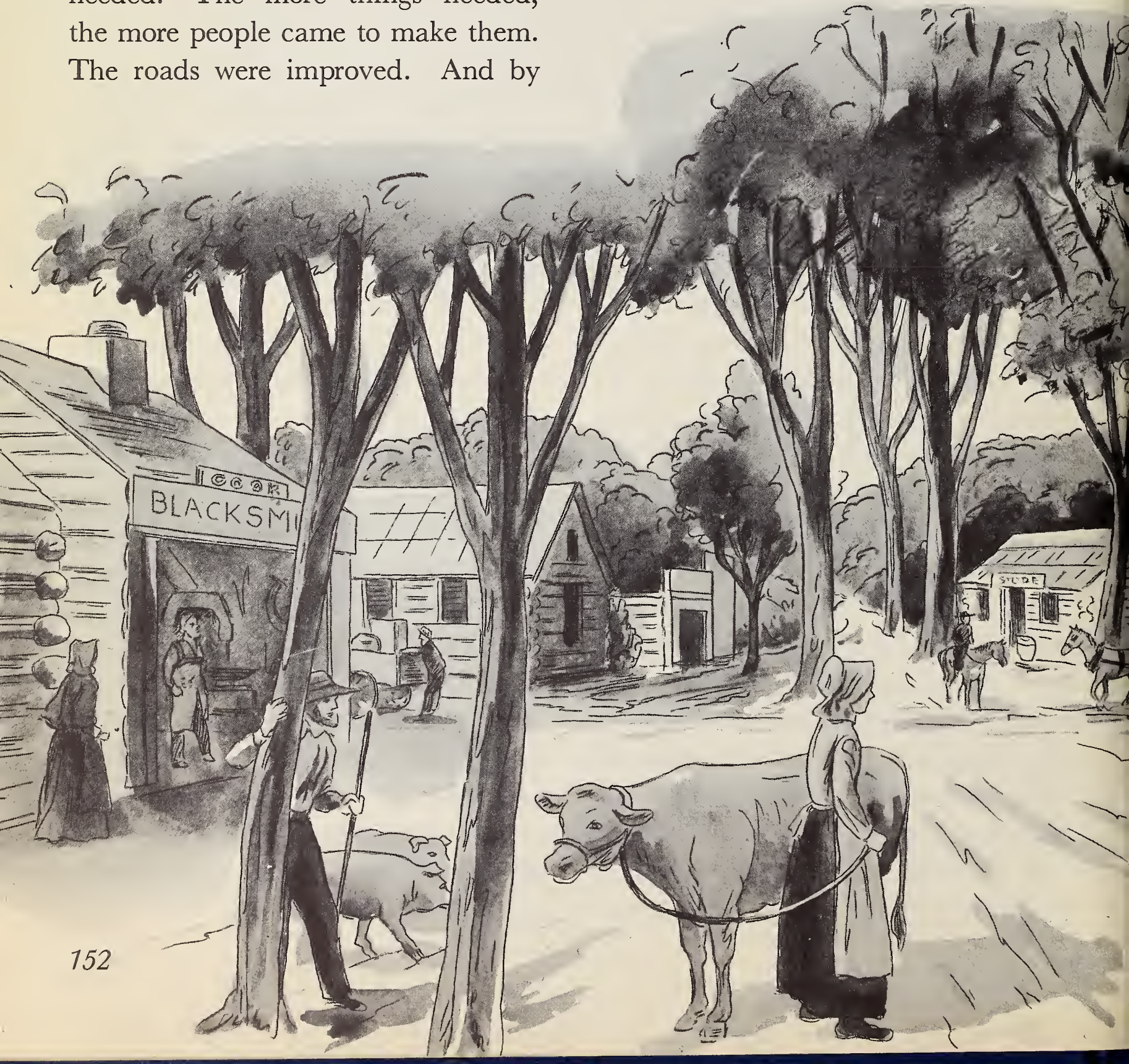
A tannery was built. When the settlers killed farm animals or when they killed wild animals in the forests they brought the hides to the tannery. Later they went back to get the leather made from the hides.

Someone in almost every family made boots and shoes for the others. For himself, too. Then a shoemaker settled at the crossroads. He took orders for boots and shoes. Soon he was so busy that he had to get other shoemakers to help him.

After a time weavers came to the crossroads. They wove the soft fleece of sheep into wool. They wove the fibers of flax into linen. Sometimes they made a cloth of linen and wool, or of cotton and wool. This cloth was called linsey-woolsey.

Tailors came to make suits for the men. Dressmakers made dresses and coats for the women. Hatters came to make hats. The more people came to the crossroads, the more things were needed. The more things needed, the more people came to make them. The roads were improved. And by and by the crossroads was no longer a crossroads. It had become a town.

It was not such a town as Little Town is. The streets were often muddy or dusty and very crooked. They ran this way and that way. There were no sidewalks, no street lamps. The yards were not carefully kept. Chickens roosted in the trees. Cows wandered around in the streets, and pigs rooted wherever they pleased.



Still, much business was carried on, and business makes a town grow.

News came that stagecoaches were to run through the town. The people were glad. Now they would no longer feel that they were far away from the rest of the world. They could even travel back to the East now and then to visit old friends.

People rode in stagecoaches then as people now ride in busses. Only not so comfortably. The coaches were not much more comfortable than farm wagons. Usually four horses were needed to draw them, but sometimes as many as six were used.

Travelers were often thrown from their seats to the floor of the coach as it went bumping over rough roads. Sometimes the coach sank so deep in the mud that everyone had to get out and walk. If a coach traveled twelve miles in an hour, everyone talked about how fast it had traveled.

It was a great day when the first stagecoach went through the cross-

roads town. People stood in front of their houses and shouted. The children danced up and down with excitement. "Now watch our town grow!" the blacksmith said to the miller. "Now watch our town grow!" the shoemaker said to the hatter.

And it did grow. Year after year it grew bigger and bigger. After a while a railroad was built through the town. Then it grew faster than ever. It grew into Big City. Think of that! Of course many years went by before that came about.

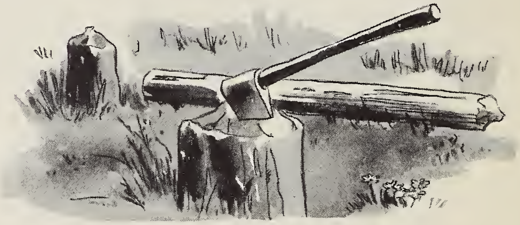
While the crossroads settlement was growing into a town, other things were growing, too. Andrew and Prue were growing, for that is the way of children. The Brown farm was growing, because every year Father and Andrew cleared more land for crops.

In time the corn fields stretched away and away to meet the fields planted in wheat. The wheat fields stretched away and away to meet the fields planted in oats. The oat fields stretched away to the pastures where the sheep and the cattle ate the green grass and grew fat.

The log house on the Brown farm had grown, too. First, it had grown by two tiny rooms, which were made right under the roof. They were very low rooms—so low that neither Prue nor Andrew could stand up straight in them. But they could both sleep there very well, very soundly.

The log house had grown also by a little room at the back. It was built against one wall of the cabin and it was called a lean-to. You can see why. The lean-to was not much more than a storeroom.

Inside the house were many new things. Father had made a table, a bench, two stools, and a big chest. A new lamp stood on the chest. It was a very small lamp, made of tin. It had a very small bowl into which Mother poured melted lard. One end of a wick reached into the lard. At the other end of the wick flickered a soft light. Everyone in the family was very proud of the lard lamp.



If you can get the wood to do it, try building a tiny log cabin like that built by the Brown family. If you cannot do that, make a drawing of the cabin, using black or gray crayon.

Ask questions about the beginning of your own town, or the town nearest you. Older people will be glad to tell you what they know about its beginning. You may find out some very interesting things about the old homes and the other old buildings.

The sawmill

# A HOUSE OF LUMBER

Once in a long while the Brown family went down to the crossroads. They didn't go often because it was a long journey for the slow-moving oxen and the rumbling farm wagon. You can hardly imagine how long the journey was because you are used to traveling more swiftly.

One day at the crossroads the Brown family heard about the sawmill that had been brought to the town. "Now we can build a new house," Mother said. She had been thinking about that for a long, long time.

"When, Mother?" Prudence asked. She hoped that the building would begin right away.

"As soon as Father can get our logs sawed into lumber," Mother said.

For a long time Father and Andrew had been saving the best of the logs as they cleared the woods to make more fields. They had fine logs of walnut, maple, and oak. Now these could be sawed into pieces of lumber of many different sizes and shapes.

What were some of the different kinds of lumber? There were heavy beams to help make the foundations. Uprights were needed to help hold up the walls. And weatherboards were needed to cover the sides of the walls. Shingles were used to cover the roof. Besides, there was lumber for doors, windows, and floor boards.

The family talked about the new house. "Four rooms upstairs and four downstairs," Mother would say. "We'll use this cabin for a kitchen. When its walls are covered with weatherboards, it will look like the rest of the house. The lean-to can still be used as a storeroom."

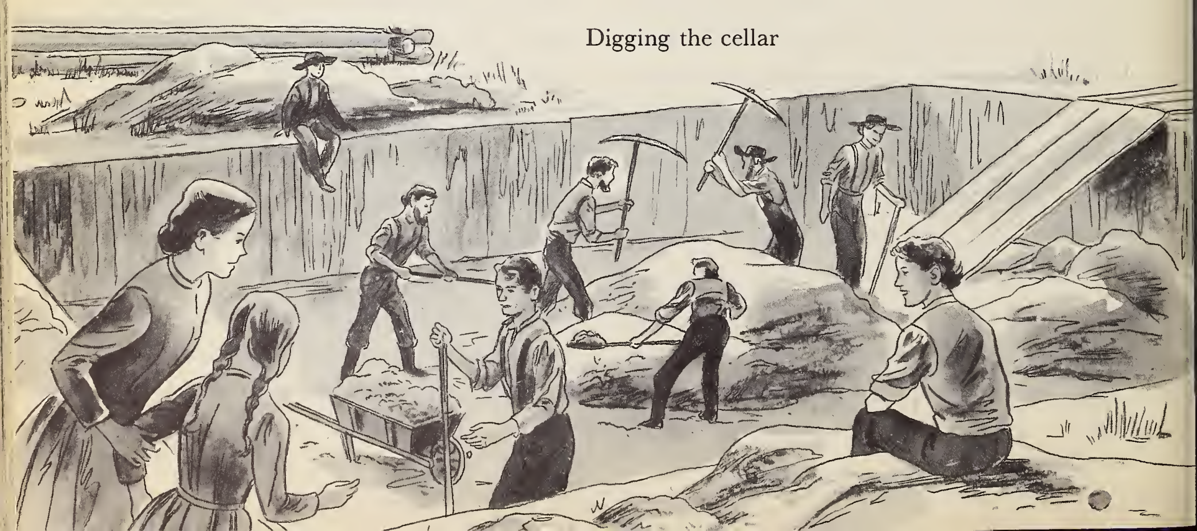
"We're going to have a big cellar," Father would say. "A good dry cellar with thick stone walls, so that we can store potatoes and apples."

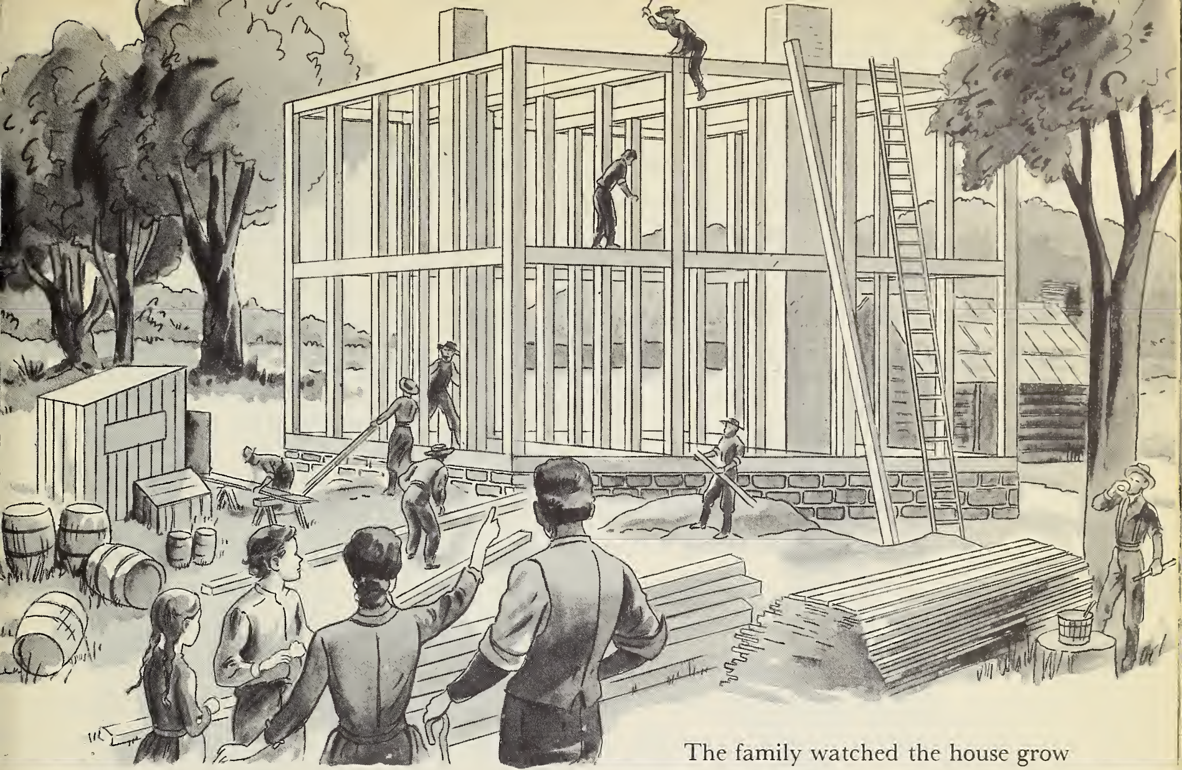
The log cabin had no cellar, you know. Fruit and vegetables were buried deep in the ground in beds of straw. They didn't freeze buried so deep and they kept firm and fresh. Still, they were not easy to get out when they were needed.

By the time the lumber was ready, many workers had come to the settlement. Among them were carpenters, bricklayers, and stone masons. And among them were men who were willing to do almost any kind of work.

Some of these men dug the cellar. With pick and shovel they made a deep hole, a wide hole. There were no steam shovels to dig with in those days, you know.

Stone masons made the walls of the cellar and laid the foundations of the house. These were made of stones of different shapes and sizes, fitted together just so. Mortar was used to hold them together. It was made, as it is now, by mixing sand, lime, and


Digging the cellar



The family watched the house grow

water. Mortar hardens quickly and then it is almost like stone.

Strong timbers were used for the framework of the house. "Good foundations and good timbers," Father would say. "Then we'll have a house that will last."

The family watched the house grow from foundations to rafters. They were proud of the wide chimneys of brick that the bricklayers laid. They were proud of the smooth weatherboards, the neat shingles.

Partitions were built inside to divide the house into rooms. The timbers of which they were made were not so heavy as those of the framework. Laths were nailed on the timbers that made the partitions. Laths are narrow pieces of wood which help to hold plastering fast to the walls.

Plaster is somewhat like mortar, though it is made of finer materials. It is spread on with a tool called a trowel. Some of it runs into the tiny openings which are left between laths. There it hardens and sticks.

As Prudence watched the plasterers, she thought of the chinking she had done long ago. "What a difference!" she thought.

While the house was being built, new furniture was being made. Nowadays when people want furniture they go to a store and choose what they want from the many pieces for sale. Most furniture comes from factories here and there in our land, but some comes from far-away lands.

When Prudence was young, people usually ordered their finest furniture made by hand by men called cabinet makers. These men were skillful. They made beautiful chests and tables and beds and chairs and cupboards and stools. They used maple, walnut, cherry, and other fine woods. They did all the work with hand tools.

Father Brown was handy with tools, but he wasn't a real cabinet maker. For the new home he wanted better pieces than those he had made for the cabin. So he and Mother ordered the new furniture from cabinet makers.

One day Father and Mother went to the town. They bought carpets to lay on the floors. They bought blinds to hang at the windows, and curtains of lace to hang over the blinds. They bought brass candlesticks and another lard lamp.

When all the new things had been moved in, the Brown family invited friends and neighbors to a "housewarming." They wanted friendship to make their house warm.

People for miles around came to the housewarming—fathers and mothers and children. Mother and Prudence set out great platters of roast chicken and great platters of baked ham. Slices of bread spread thickly with sweet, yellow butter. Big pots of baked beans and dishes of cheese. Jellies and jams and pickles. Rich puddings fairly bulging with raisins. Apple pies and spice cakes and other good things besides.

Everyone ate and ate and ate. And everyone had a wonderful time. This is an interesting thing about all that good food. Everything except the sugar and raisins and spices that were used in some of the sweet dishes, and the coffee that the grownups drank—everything except those things had been raised right on the Brown farm.

All the ladies admired the new furniture and the soft, pretty carpets. They admired the curtains of lace that hung at the windows. And they said that no one for miles around had such a fine home as the Browns.

All the men talked about the big news. And what was that news? Another road was to be built—a road that would begin at the crossroads town and would run on toward the west. A road built of stone. A road that would never be knee-deep in mud. And the most wonderful part of the news to Father Brown was that the road would run right past the Brown house.

"Some day it may be a great highway," he said. He remembered that Mother had always wanted to live near the trail. "Some day that road

H John

may be a busy street in a great city," he thought. "Who knows?"

Father Brown couldn't know what a busy road that road would become. As the years went by, farm wagons and big covered wagons would rumble over the road. Carts would run lightly and buggies and surreys would roll proudly and smoothly along. Stagecoaches, too, would hurry over the road. They would be taking passengers from the east to the west, and passengers from the west to the east. All these would be drawn by horses.

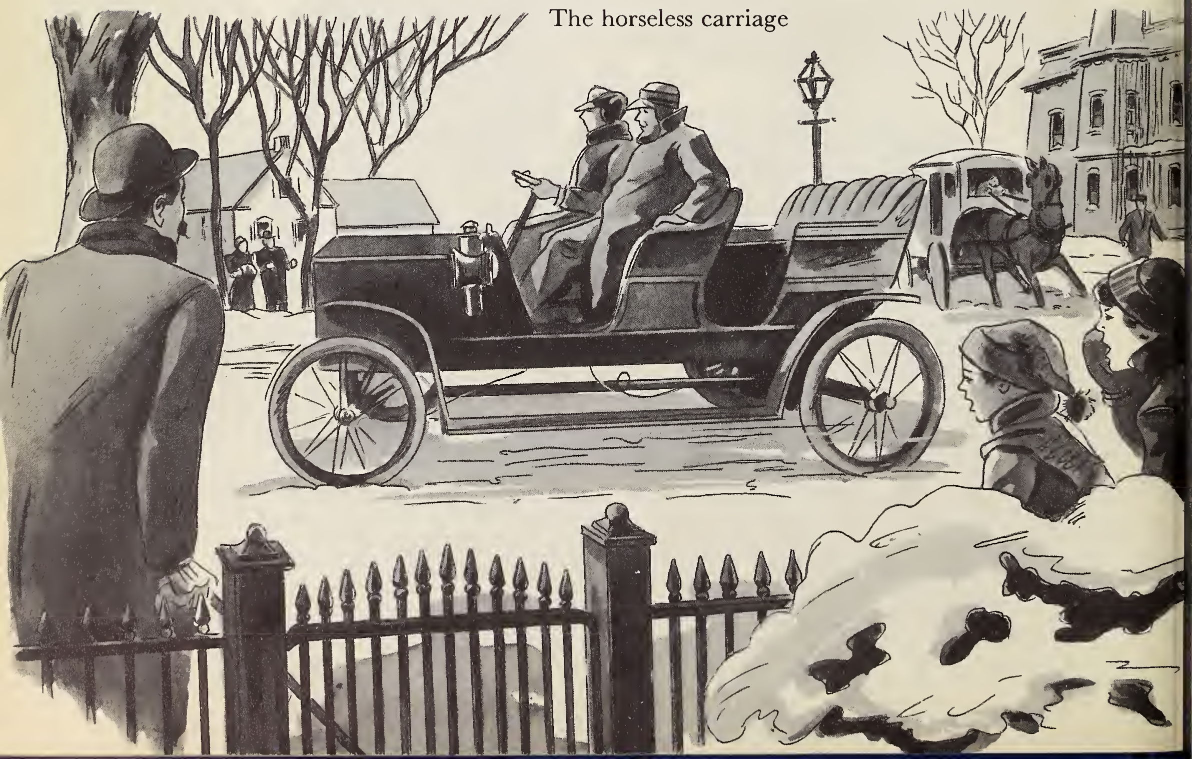
Father Brown couldn't know that one day in this same house his granddaughter would draw the curtains aside to see a bicycle! That would be something very new in the world.

Some day an automobile would go chugging along the road. It wasn't called an automobile though. It was called a horseless carriage.

All the farm women who lived on the road at that time ran to look at the strange new machine, which ran at ten miles an hour. Even faster. It was run by steam power, and everyone thought it was wonderful. But it was thought to be dangerous, too.

Years after, automobiles run by gasoline would whiz over that road at forty to fifty miles an hour.

No, Father Brown couldn't possibly know about all those strange things that would go hurrying over the road. If he had been told about them, he wouldn't have believed what he heard.



The horseless carriage

# *After Many Years*

The years went by. Ten, twenty, thirty, forty, fifty, a hundred years. All through those years the town at the crossroads grew. Slowly at first, then more and more rapidly. It was growing into Big City.

More people came. And as more came, more things were needed.

More good roads were built. They led from the town to the farms, and they ran farther on. Farmers brought more and more products to market.

After the railroad was built, farm products were sent to far-away cities. Things from other parts of the country were shipped into the town.

As time went on, more and more big factories were built. One factory made shoes. Another one wove cloth. Another made farm machinery. The more factories were built, the more people came to the town.

All the time the town was spreading out. Farms near by were divided into city lots, and houses were built on the lots. Street were laid out and paved. Sidewalks were laid. Street lamps were set on the corners. Men went around in the late afternoon to light the street lamps.

The very first houses and other buildings of the town were of logs, you remember. Later, lumber was used for all building. After a time bricks were brought by the carload over the new railroad tracks. They were used for many new buildings.

All through those years the house that the Brown family had built still stood. Think of it! More than a hundred years had gone by. And still the house stood.

And who do you suppose lives in that house now? Andrew Brown! Not the same Andrew Brown who had come over the trail in the big covered wagon. Certainly not! This Andrew Brown is the great-great-grandson of that first Andrew Brown. He and his wife and their two children, Nancy and Jim, live there.

Many changes have been made all around the old house. In the first place it no longer stands all alone in the center of the Brown farm. It stands at the edge of a park, which was once a part of the farm. A suburb of Big City has grown all around it. The road that was built long ago is now a fine boulevard.

Changes have been made inside the house. Nancy and Jim never grow tired of hearing about them. "Once upon a time," Father tells them, "all the heat for these rooms, upstairs and downstairs, came from wide fireplaces. Logs crackled and blazed and snapped out bright sparks.

"Those flaming logs looked very pretty, but most of their heat went up the chimneys. You cannot imagine how cold these rooms often were.

"Many years later," Father says, "stoves were set up. Coal was burned in those stoves. After many more years a furnace was put in the cellar. Only the cellar wasn't called that any more. It was a basement.

"That furnace was something like ours," Father explains. "From it ran several pipes. Heat flowed through the pipes to every room in the house just as it does now. Can you see how it was? First fireplaces, then stoves, and then a furnace hidden away in the basement.

"Ways of lighting this house have changed too since your great-great-great-grandfather's day," Father goes on explaining. "At the time when this house was built, most people used candles for lighting. But my great-great-grandmother had also two lard lamps. After many years oil-burning lamps were used. Then came lamps that burned gas. Finally the house was wired for electricity.

"The water supply is different, too," Father says. "My great-great-grandfather's family carried all the water they used from a spring not far away. Many years later a well was dug near the house. Still later, city water was piped into the house. Then a bathroom was put in."

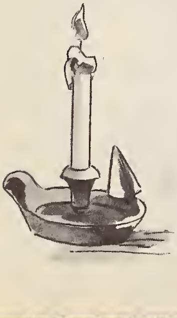
"Maybe the old house was surprised when it got a bathroom," Nancy said.

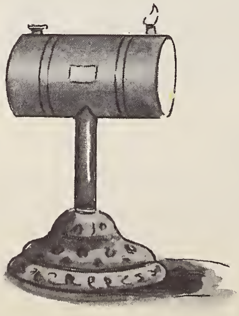
"Maybe it was," said Father. "In the long-ago days the washtub was brought into the kitchen on Saturday night. And then, one after another, everyone in the family had a bath.

"At one time," Father explains, "a log house used for a kitchen stood where our kitchen now stands. It was covered with weatherboards so that it looked like the rest of the house. Wouldn't the first Brown family be surprised if they could see our new kitchen? Our stove, our refrigerator, our fan, all run by electricity?"

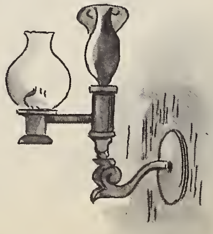
"And the garage underneath the kitchen," said Jim. "That would surprise the Brown family, too."

Nancy and Jim try to imagine how all their modern things would have looked in the old log house. They can't. They just wouldn't fit in.


A candle


A lard lamp

An oil lamp


A gas lamp

# A BRICK HOUSE

Not far away from the Brown home some people began building a new brick house. Every day Nancy and Jim went to watch the house grow. They tried to remember what Mother had told them, "Watch if you want to and learn all you can. But don't go too near. And don't get into the way of the workmen."

Nancy and Jim watched as the digging was done for the basement. That was done by a huge steam shovel. The shovel dipped down into the ground, dug into it, and filled itself full of earth. Then up it came, slowly, and dumped the earth into a near-by truck, which hauled it away.

When the hole was wide enough, long enough, and deep enough, walls and floor were made of concrete. The concrete was made in a large machine called a concrete mixer. Into the machine the workmen poured bags of gray powder, called cement, and then added some water, sand, and gravel.

Round and round went the mixer, churning and churning and making a very loud noise. Finally the concrete was poured out to make the floor and the walls of the basement. At first it was soft as mud. But after a while it hardened like stone.

When the basement was finished, the foundations were laid. They, too, were made of concrete.

Then up went the framework of the house. It was made of strong, heavy timbers. Nancy and Jim wondered why lumber was used in a brick house. Father explained that nearly all buildings must have a framework of some kind. The framework of nearly all homes is of lumber. In large buildings, such as the skyscrapers of Big City and other large cities, the framework is of steel.

The lumber for the new brick house came from far-away forests. Most of

A large modern sawmill. How do the logs go up into the mill?

*George Lohr, courtesy American Forest Products Industries*

the fine trees that once stood on the Brown farm had been cut down long ago. No sawmill stood in the city.

Nowadays there are not so many sawmills here and there through the country as there once were. Nowadays sawmills are set up in the great forests from which most of the lumber comes. The logs are turned into lumber in or near those forests. People have found that it is easier to ship lumber than to ship great, heavy logs.

In many forests the lumbermen cut the trees in winter when the ground is frozen and covered with snow and the rivers are frozen. The logs are piled on sleds and hauled by horses to the banks of a river. Sometimes tractors are used instead of horses for hauling.

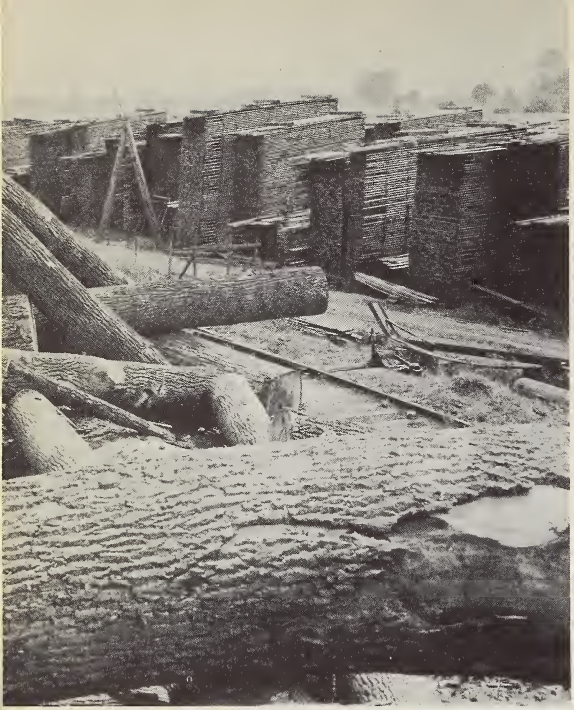
The logs lie on the river bank until spring. Then, when the sun and the warm winds melt the ice, the lumbermen have a different kind of work to do. They roll the logs into the river. The river carries the logs downstream to a sawmill that stands somewhere along its banks.

Does it seem to you that the lumbermen have an easy job in rolling the logs into the water? Does it seem to you that the waters of the river do most of the hard work in carrying the logs to the sawmill?

It isn't an easy job at all. Sometimes at a bend in the river, the logs pile up, one on another. Then they get into what the lumbermen call a log "jam." When this happens, the workmen have to run out on the wet, slippery logs. They have to pry the logs apart with long poles. It is hard work, dangerous work, to break up a log jam. And it isn't easy to get the logs into the river in the first place.

*K. S. Brown, courtesy American Forest Products Industries*

Could you stand on these floating logs?



Allen from Century Photos

Stacks of lumber and a big pile of logs

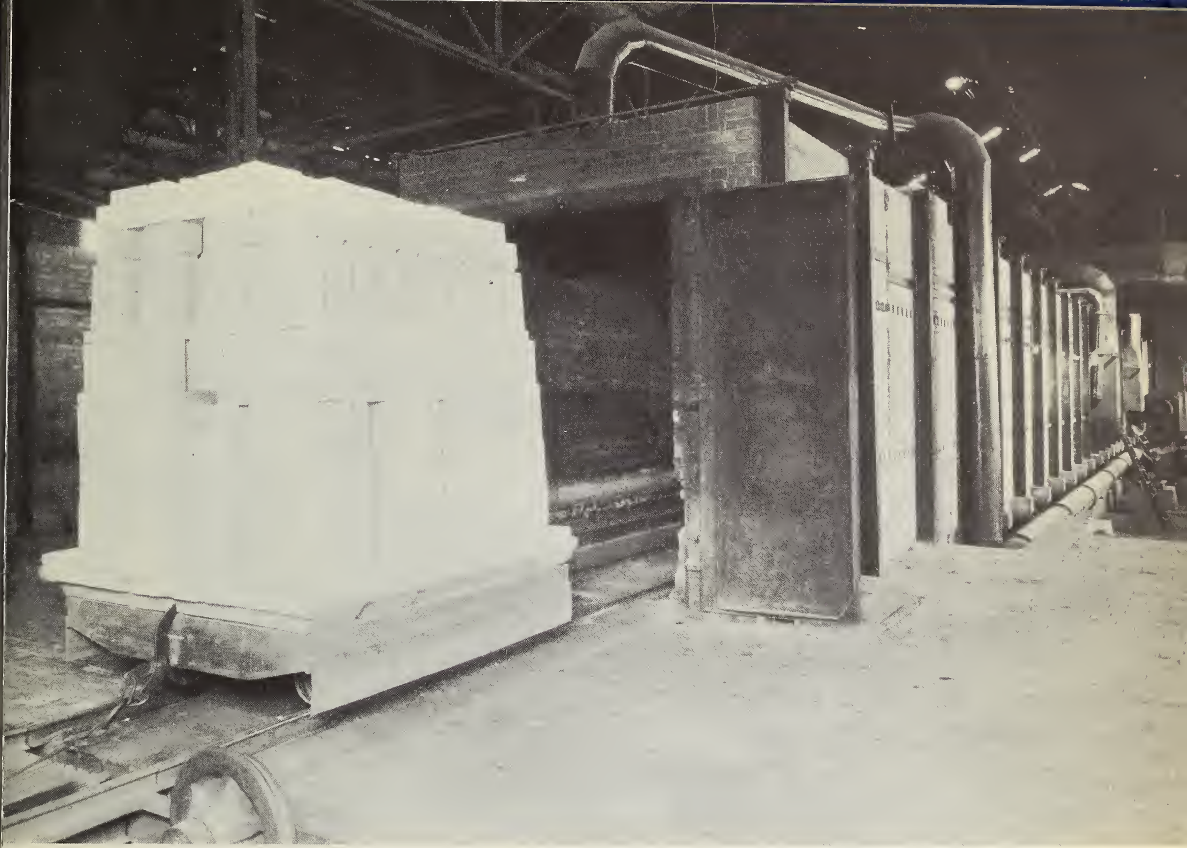
All that work is something to think about the next time you see a great stack of lumber.

Now to go back to the brick house that Nancy and Jim were watching. When the framework was up, brick masons laid the walls. They were very skillful workmen. They laid the walls perfectly straight and true. They knew just how much mortar to use to hold the bricks together. Other workmen mixed the mortar and carried the bricks to the house in hods.

At lunch time one day a workman explained to Nancy and Jim how bricks are made. Clay is dug from the ground and brought to the brick

Brick masons building a wall straight and true, guided by the string they have put up

© G. A. Douglas from Gendreau



Courtesy Harbison-Walker Refractories Co.

These bricks will be baked hard in the big, long brick kiln.

plant, or factory, in small cars. There it is put into a machine and mixed with the right amount of water. The machine presses the mixture into the shape of bricks—just so long, just so wide, just so thick.

Near by are large furnaces. They heat enormous ovens, or kilns, where the bricks are baked hard and firm. Then they are ready for use.

Brick by brick the walls of the new house were built. Frames were set in for the windows and doors, and bricks were laid around the frames. Later the wide windows were set in. The smooth wooden doors were hung on hinges of steel or iron.

One day big trucks came bringing bundles of shingles. They were for the roofing. On the outside of each bundle was the word *fireproof*. The shingles had been made so that they wouldn't easily catch fire.

Nancy and Jim were watching the building one day when a big truck came in at the driveway. "Where is this garage to be unloaded?" the truck driver called. A workman told him. He and other workmen helped unload some very large crates.

"How can a garage be in those crates?" Nancy wondered. But Jim couldn't tell her. That night they asked Father about it.

"Yes," Father said, "that garage was delivered in crates. It is a prefabricated garage. Let me see, how can I explain that?"

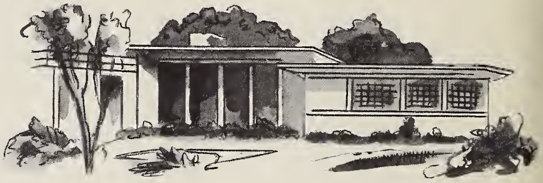
He thought for a while, then he said, "*Pre* means 'before.' *Fabricated* means 'made.' The garage is made before it is set up."

Nancy and Jim still didn't understand. Then Father explained some more. "The walls, floor, and roof of that garage were all fabricated in a factory. They were all ready to be set up when they left the factory.

"Each piece of the garage was made to fit to another piece—just so. Directions were sent with the walls, the floor, the roof. The workmen will follow the directions in setting the pieces together. In no time at all, that garage will be ready for use.

"All the buildings you have seen before," Father went on, "have been built from the ground up. Frames, walls, and roof had to be made of different pieces of lumber. You know about that way of building. In prefabricated buildings, frames, walls, and roofs come ready-made. Such buildings are being used more and more for small homes and cottages.

"Think about the little log house that used to stand here," Father said. "Think about this wooden house that the Brown family built. Then think about the brick house you have been watching, and about the prefabricated garage. When you have done all that thinking, you will have some idea of how much the ways of building have changed. There will be many more changes in building by the time you children are as old as I am."



Have you ever watched the building of a house? If you have, tell about it in class.

Some houses are now being built with walls partly of glass, or with very wide windows of glass. Sometimes clear glass is used for these. Sometimes glass bricks are used. Perhaps you have seen such a house or a picture of one.

Look through the magazines at home or at the library for a picture of a house with glass walls. Do not tear the picture out, but ask if you may bring the magazine to school. Talk about the pictures in class. Do you think it is a good idea to use glass for walls? Why or why not?

When everyone used stoves

# HEAT AND LIGHT

## *Wood, Coal, Gas, and Oils as Fuels*

Did you ever find out how homes and other buildings are heated? If you did, you know that several different kinds of fuel are used. The most common of these are wood, coal, gas, and oil. Sometimes electricity is also used to give heat.

Wood was the very first fuel. It was used long, long ago—thousands of years before our country began.

The people of those long-ago days picked up wood where they found it. They gathered the twigs and small branches that had fallen from trees. They used trunks of trees that had been blown down in storms.

After many years they learned how to cut down trees. Ever since that time people have been cutting down trees for their own use. To build houses, to make furniture and other useful things, and to use as a fuel.

Wood is not used as a fuel so much as it once was. Still, it is burned in many homes in stoves and furnaces. And it is burned in open fireplaces. In these days most people use fireplaces not so much for the heat as for the pleasure of watching the fire. They like to hear it crackle and snap as it burns.

Many good trees have been wasted to make fuel. Trees that were strong and fine—trees that should have been used for beautiful and lasting things—have been cut down and burned as fuel. That is bad.

Some fine trees have been burned just to get rid of them when new fields were cleared. That is worse.

Nowadays people are becoming more and more careful not to waste wood. The forests of our land are being more carefully used. In some parts new forests have been set out. Still more will be planted, so that people who live here many years from now will have plenty of wood.

Coal is a more important fuel than wood. When it was first discovered, people were slow to use it. Coal is harder to kindle than wood, so it is not so easy to start a coal fire. But coal gives greater heat than wood, so it really is a better fuel.

Do you know how we get coal? It lies buried under the surface of the earth. In some places the coal lies deeply buried. In other places it is found near the surface. Wherever it is, it must be dug out or mined.

How did it happen to be buried in the earth—this wonderful fuel?

Once upon a time, ages and ages ago, strange forests grew in parts of the world. They grew in very low, swampy places where much of the ground was covered with water. They grew thick and dark and deep.

Some of the trees were great evergreens with long needle-like leaves. Others were like enormous ferns. Can you imagine a wood fern as tall as a tree? Perhaps not. Yet such enormous plants and oddly shaped trees grew in those thick, dark forests long, long ago.

Many smaller plants grew among the giant trees. They grew very fast in those warm, steamy swamps. They grew and they grew and they grew. After a long time they died, and they lay where they fell. Soon they were covered with mud and water.

Other such trees and plants grew. They, too, died. They, too, lay where they fell. They, too, were covered with mud and water. At last, after many hundreds of years, there were layers and layers of trees and plants all covered over with water and mud and pressed down by the great weight.

Millions of years went by. Slowly, very slowly, those layers of trees and leaves were turned into coal. Perhaps you have found the print of a leaf on a large piece of coal. If you haven't, you may. When you do, you will know how it got there.

Coal is mined in several different ways. In mines where the coal is near the earth's surface, the ground is stripped off by machines made especially for such use. The coal can easily be taken out. Such mining is called strip mining.

Often the soil is spoiled for farming or for any other use by strip mining. That is bad. Anything that spoils the earth for use is not good.

In places where coal is buried deep in the earth, mining is much more difficult. The miner leaves his home and rides with other such workers to the mine. He gets on an elevator which is run by electricity. The elevator goes down, down, down through a long shaft.

It makes a number of stops. At each stop some miners get off and begin work, for at each one there is a layer of coal. The men walk through a tunnel in the layers of coal. Each tunnel is lighted by electricity, and narrow railroad tracks run through it.

Some miners work with machines that cut under the walls of coal. Cutting under the walls weakens them and

These miners are in a deep coal mine. They use the machine to load the car with coal.

*Bureau of Mines, Department of the Interior*

they crumble and fall. Then the coal can be taken out. It is loaded into cars that run on tracks. The cars are lifted out by powerful machines and the coal is dumped into freight cars.

Sometimes miners drill holes in the coal walls, and other miners put dynamite into the holes. Very likely you know that dynamite explodes and when it does it tears everything near by to bits. It breaks the thick coal walls into bits. The miners are very careful to get out of the way before an explosion.

When the explosion is over, the workers come back to the broken wall. They shovel the coal into cars which are then lifted out of the mine.

Some of the pieces of coal are so large and so heavy that they cannot be easily handled or shipped. These pieces are broken up by a machine called a breaker.

Other machines sort the coal, so that lumps of nearly the same size can be sold together. When all that work has been done, the coal is loaded into railroad freight cars. In these it is carried to the places where it will be used.

Many, many thousands of homes are heated by coal. So are factories, hotels, restaurants, schools, churches, and other public buildings.

Coal furnishes the power for the engines that pull freight trains and passenger trains. Coal furnishes the power that sends big ships and little ships skimming over the waters.

How does coal furnish that power? It burns with great heat. The heat turns the water in boilers to steam. And there is great power in steam—power to do all sorts of work which man alone could not do.

Still you have not read of all the uses of coal. It is used to make other everyday fuels—one that you can't see and one that you can.

The fuel that you cannot see is artificial gas, which may be burned in your kitchen cookstove, or in a heating stove, or in a furnace. You can see the clear flame in the burner of the stove, but you can't see the gas. Sometimes you can hear it making a sputtering sound. And sometimes you can smell it, when it escapes from one of the pipes.

Gas has an unpleasant odor which should be a warning—a danger signal. It means that a pipe is leaking or a burner has not been closed tightly. Both are dangerous because gas causes terrible explosions. Often people are hurt and buildings are destroyed in such explosions. Always tell your mother or some other older person if you smell gas escaping.

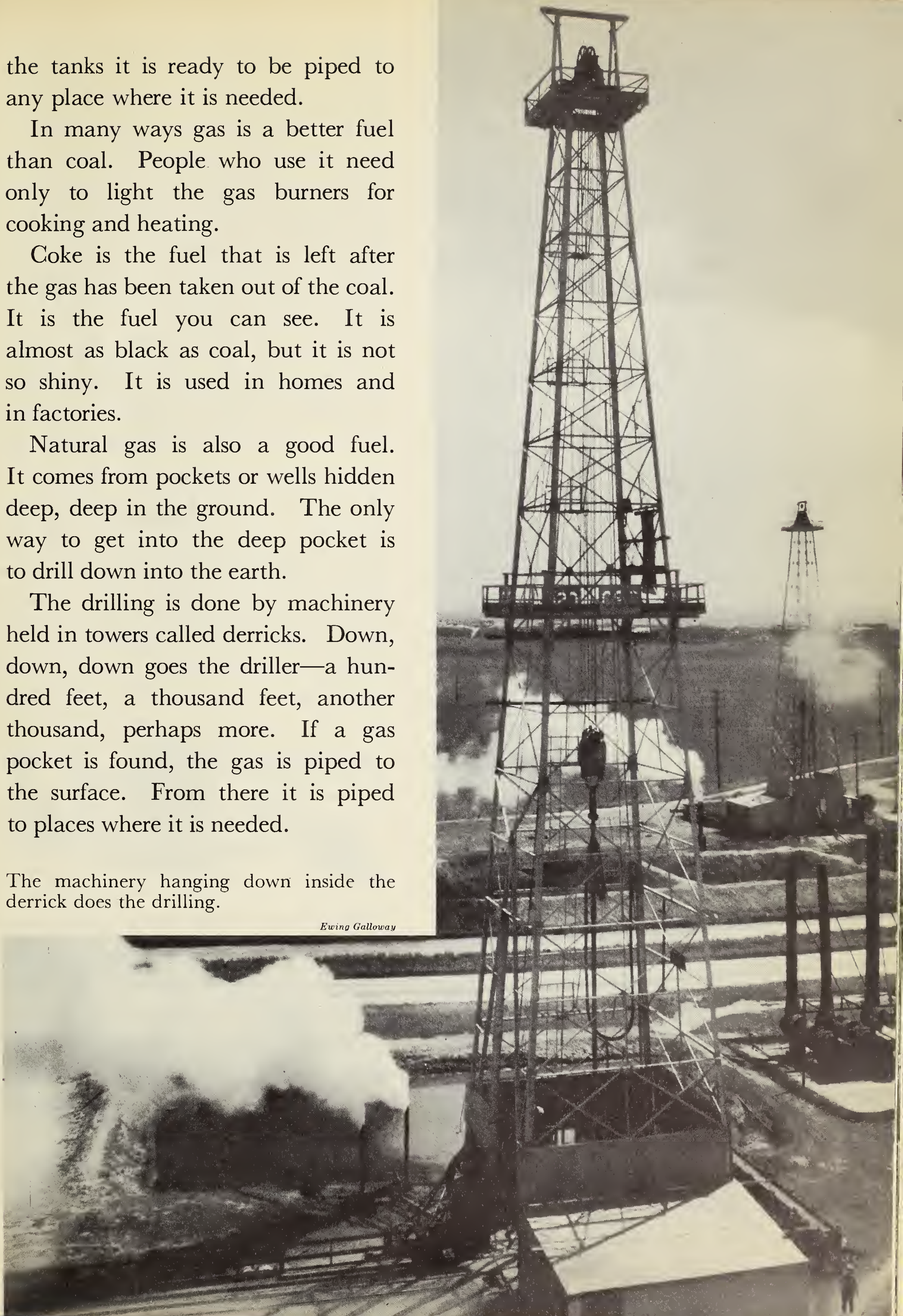
Artificial gas is made by heating coal in large ovens. Coal contains gas. As it is heated, the gas passes out of it. It is drawn out of the oven and stored in big tanks. From the tanks it is ready to be piped to any place where it is needed.

In many ways gas is a better fuel than coal. People who use it need only to light the gas burners for cooking and heating.

Coke is the fuel that is left after the gas has been taken out of the coal. It is the fuel you can see. It is almost as black as coal, but it is not so shiny. It is used in homes and in factories.

Natural gas is also a good fuel. It comes from pockets or wells hidden deep, deep in the ground. The only way to get into the deep pocket is to drill down into the earth.

The drilling is done by machinery held in towers called derricks. Down, down, down goes the driller—a hundred feet, a thousand feet, another thousand, perhaps more. If a gas pocket is found, the gas is piped to the surface. From there it is piped to places where it is needed.



The machinery hanging down inside the derrick does the drilling.

*Ewing Galloway*

Many men make their living by drilling for gas pockets or gas wells. Sometimes, after they have worked hard and spent a great deal of money, they have what is called a dry hole. That means they have not come to a gas pocket. They have found only rock and sand of different kinds.

You may believe that a dry hole is very disappointing. It is disappointing to the man who owns the land on which the drilling was done, and to the drillers who spent their money to dig deep into the earth.

What do the drillers do? Do they stop working and say they will never drill another hole in the ground in the hope of finding a gas pocket?

No, they will try again in some other place. Perhaps the next time they will be more fortunate and drill into a gas well. And perhaps they will be fortunate enough to drill into another kind of pocket.

What kind of pocket would that be? A pocket of oil, hidden deep, deep in the earth. The only way to get either gas or oil is by drilling, you see.

If an oil well has been reached, everyone is pleased, because oil is needed in great quantities in almost every part of our country. And it is needed in nearly every part of the world. Its use is growing more and more important.

The oil is brought from the ground by a pump which is under the derrick. When oil is brought up, it is thick, black, and heavy. There is not much use for such oil. It must be refined before it really is useful.

Sometimes it is pumped into pipes that carry it to factories called refineries. Sometimes it is put into large tanks and taken by trains or trucks to the refineries.

At the refineries many useful things are made from the oil. One of these is gasoline, which is used to furnish power for trucks, automobiles, busses. It is used to run other kinds of engines. Motor oil, which makes engines run smoothly, is made from oil. Kerosene is made from oil, too, and it is burned in lamps to give light. Oil is burned in furnaces. These are only a few of the uses of oil.

Many of the fine forests that once stood in our land have been wasted. Can you tell how? Can you tell why that is bad?

Do you know of any place where trees have been set out to grow into forests? If you do, tell about them in class.

Along some of our highways there are roadside parks with tables and benches. Why do people like to stop at those that have trees?

Along some forest roads are signs that say, "Put out your fires," or, "Break your match before you throw it away." Why are such signs used?

Do you use natural or artificial gas in your home? How do you know that your answer is true? In some parts of our land there are no oil wells, yet the people have trucks and automobiles. Where do they get the gasoline to run them?

## *From Candles to Light Bulbs*

You remember that people in long-ago times lighted their homes, their shops, their churches, and other buildings with candles. Many candles are needed to give as much light as one good kerosene lamp. Many more candles are needed to give as much light as one small electric bulb.

You know, of course, that electricity for your light bulbs comes from wires that run through the walls of your home. So does the electricity for your radio, your telephone, your refrigerator, your washing machine, and other electric machines. Where does this electricity come from?

In many parts of our country are buildings called electric power plants. Such plants supply the electricity.

*Century Photos*

This steel tower helps hold up wires that carry electricity from a power plant.

Wires carry it to your home. They carry it to other homes, too, sometimes miles and miles away.

Just how electricity is made is hard to understand. Yet it is easy to see how many wonderful, magical things people can have because of it. When you grow older, you may become interested in the wonders of electricity. Then you will want to learn all you can about its magic. Now it is enough for you to know that electricity is made by water power or by steam power.

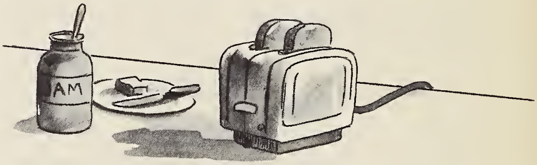
Water power, you know, comes from swiftly running water. The old mill at the crossroads town was run by such power. So were hundreds of other mills of different kinds long ago. So were the first factories. So are many factories now. Many electric power plants are run by water power.

Some electric plants are run by steam power. The heat to turn the water to steam may come from coal. It may come from gas—natural or artificial. Perhaps you can find out about the power plant that furnishes the electricity for your home. You can learn where it is and how the power is furnished.

Wherever it is, the people who work there are working for you and your family and for all the families that live in your town.

Have you been thinking how much you depend on other people? You depend on them for the materials of which your home was built. You depend on them for its heating and lighting. You depend on other people for the foods you eat, for the clothing you wear, for the books you read, for the movies you see—for most of the things you have or do.

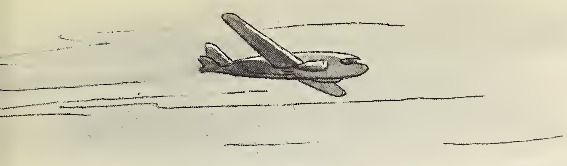
You could not get along for one day—not for one hour—without the help of other people somewhere in the world. Does that make you think that you should do something useful?



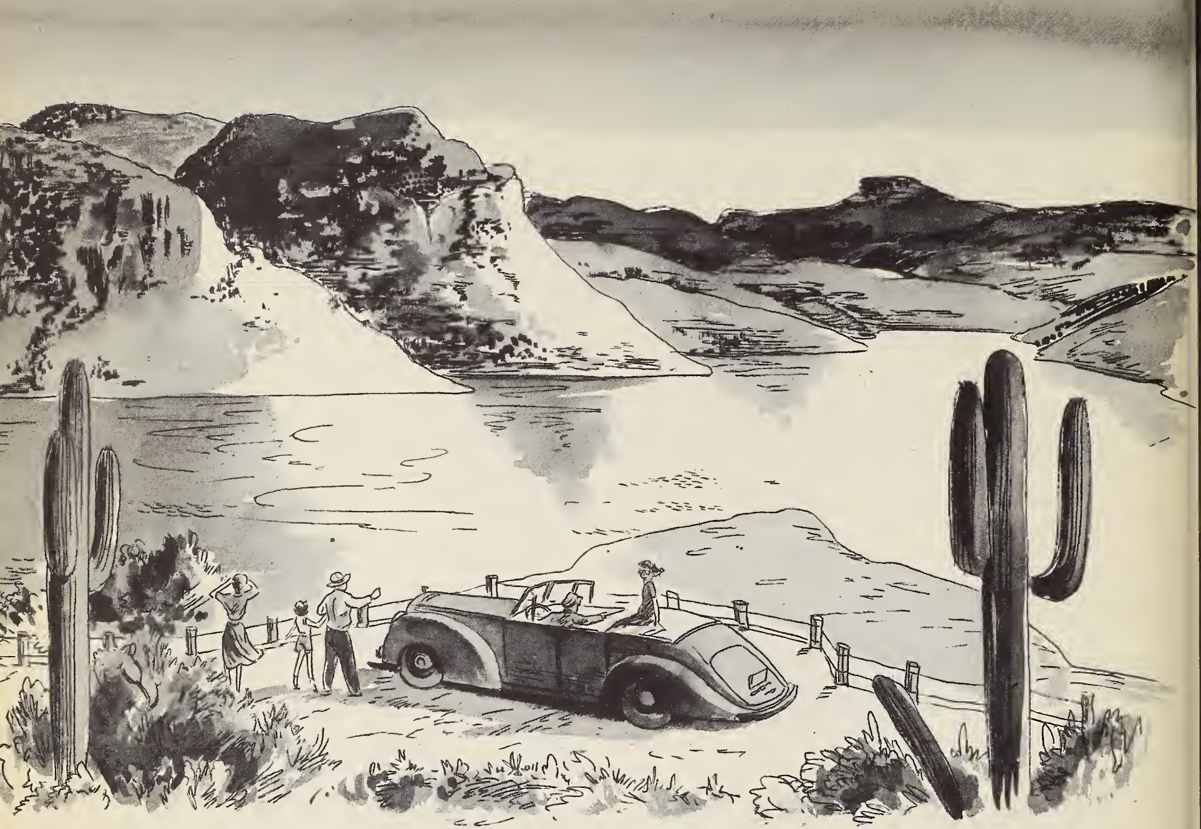
Make a list of all the things you know that are run by electricity. Perhaps it would be well to do that in class, as you may find some of the words hard to spell. In class you can help one another.

Why is a kerosene lamp better for lighting than a candle? Why is a gas light better than a kerosene lamp? Do you know of anyone who uses candles now? How are they used?

See how quickly each one in your class can name someone who works for you in your community. Name the person, not by name, but by the work he does. Suppose you begin with the mailman and go on from there.



# *Better Ways of Happier Living*



# BETTER WAYS OF DOING THINGS

All the communities you have been reading about are parts of the United States of America. The dairy farm where Patty took care of her cow, the wheat field where Bobby helped with the harvest, the orange grove where Sam picked oranges, the land where cotton grows—all these are parts of our great and wonderful land.

Little Farm, with its sheep, its pigs, its cattle and horses, is a part of our country, too. So are other small farms. So are large farms and middle-sized farms. And so are the wide-spreading ranches.

Big City helps to make the United States. So do other large cities. So do small towns like Little Town.

## Better Playgrounds

And these are not all. Scattered over our country are dozens of parks, enormous parks. They belong to our country. They are known as United States parks or national parks. They are large—so large that beside them the parks of Big City would seem like only small patches of ground.

Tourists from all over our land and from other lands, too, may visit the national parks. They may drive their own automobiles over roads as smooth as a floor. They may drive up mountain sides over wide, curving roads. If they like, they may go touring through the parks in big, comfortable busses. And when they are tired and hungry, they may rest and enjoy good food at fine hotels.

Some national parks are made up of mountains with beautiful valleys among them. The mountains are the most exciting sights of these parks. Many of them are great, towering mountains that reach up, up, up toward the sky like city skyscrapers—only much higher. Some of them are bare and rocky. Some are covered with thick green forests. Many are so high that their caps are always covered with snow and ice.

Among the mountains are clear, deep lakes. They are formed partly by melting snow and ice and partly by streams that go dashing down the sides of the mountains. From a distance the lakes look like patches of blue sky. Trees and bushes grow along their shores. Wild flowers make bright borders around them.

While they visit the parks, tourists may row on the lakes or fish in the streams. They may walk through the forests which climb up the mountain sides. They may ride horseback along pleasant paths. They may go mountain climbing. They may do many other things to have a good time.

## Taking Care of Things

Parts of the United States are waste lands. Such lands are not so pleasant to visit or even to think about. Many are waste lands because people at some time or other have been careless and thoughtless.

People have spoiled fine forests by cutting down the very finest trees. Of course, it is right to use the fine trees of our land for building homes, for making furniture, and for other useful things. But, when many trees are cut down, other trees should be planted. You can see why.

Some fine forests of our country have been wasted by fires. Not that anyone intended to start fires. No, they were started because someone was careless. Perhaps burning coals were left in a camp fire. The wind blew them about and soon a whole

K. S. Brown, courtesy American Forest Products Industries

Young trees growing into a fine forest

forest was blazing. Perhaps someone threw a lighted match among dry grass or dry pine needles. A fire was quickly started. Before it could be put out, miles of forest had burned.

Some parts of our country always have been waste lands; that is, things have never grown well in the soil. And nothing of value has been found under the soil. No gas, no coal, no oil—nothing.

Many waste lands are being made useful. Forest trees and orchards have been planted on the lands where trees will grow. Useful crops of different kinds have been planted. Isn't it good to know that such things can be done? There are still lands, however, that have not been made useful. Perhaps ways will be found to make them useful, too.

Farms, ranches, cities, towns, parks, and waste lands help to make our country. And these are not all. Great rivers flow through the land. They flow in every direction. They flow to the ocean that lies on the west. They flow to the ocean that lies on the east. They flow to the warm waters of the south and to the cooler lakes of the north.

Where do the great rivers of our country come from?

They are made of the waters of many small streams. Dashing, splashing streams hurry down mountain sides to help form the rivers. Little brooks flow quietly through meadows and fields to reach larger streams. These streams, too, flow through the land quietly. They join the great rivers. And the great rivers flow on and on to empty their waters into the oceans and lakes.

You might think that the rivers would empty all their waters into the oceans. Then soon there would be no more rivers. But that is not true.

The sun draws water from the wide oceans. The sun draws water into the air, making great clouds of vapor. The clouds are driven over the land by the winds. Water drops from the clouds, down, down, down to the earth in raindrops, in snowflakes, and sometimes in hail.

Some of the water soaks into the ground. Some runs off to join little brooks and big streams and great rivers. The rivers carry the waters down to the oceans. The sun draws the water up from the oceans, and the whole thing starts all over again.

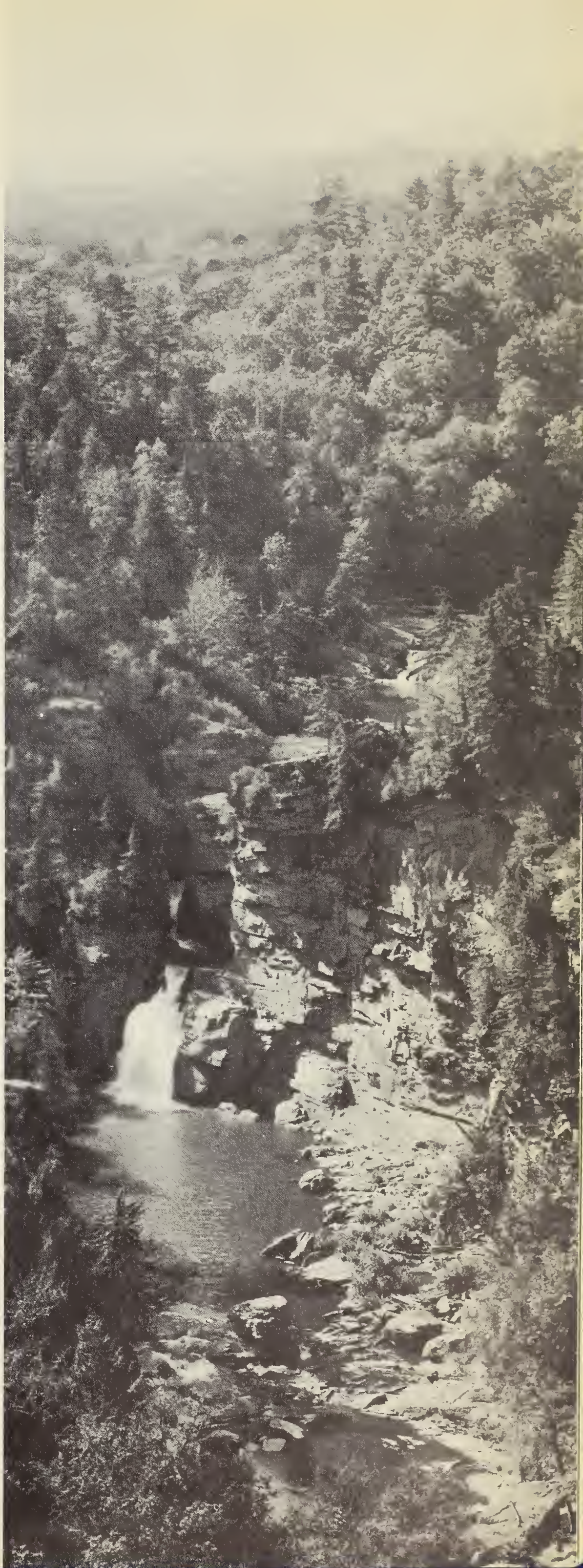
Still you have not read about all the wonderful things that make our country. This book could not tell you about all of them. No other book could tell you all about them.

No one can ever learn all there is to be learned about our land. The older you grow, the more you will want to know. The more you know, the more you will want to know.

## *Traveling and Sending Word*

All the different parts of the United States are joined together by roads of one kind or another. Some of these, you remember, are dirt roads. Some are broad, smooth highways of cement or other hard materials.

Trucks speed over these roads, carrying goods of many kinds. Busses and automobiles speed over these roads, taking people from one place to another. Busy stations, set close to



Ewing Galloway

Trucks and automobiles on a broad highway

the roads, supply oil and gasoline to trucks, automobiles, and busses.

Roads of water help to join many parts of our land together. These are the large lakes and wide, gently flowing rivers. Steamboats and motorboats skim over the waters of rivers and lakes, carrying goods and people.

Roads of steel run in every direction over our land. They also help to join all the different parts of our country together. Over these steel roads run fast freights and slow freights. Some are run by steam power, others by electric power. They carry goods of all kinds.

This steamboat is pushing flatboats full of gravel and sand along a gently flowing river.

© Caufield & Shook from Ewing Galloway

Ewing Galloway

This long, fast train carries many people across the country on shining steel rails.

Over the steel roads run passenger trains, too. Cars that carry mail may be attached to passenger trains. But some trains are entirely made up of mail cars. Day and night, night and day, trains carry people, goods, mail in every direction.

High in the sky are roads of air. You cannot see the air roads as you can see the waterways, the steel roads, and the highways. But the air roads are there just the same. The pilots who guide airplanes know exactly where these roads are.

Pilots can find air roads even when they can't see the earth beneath them. They may be flying at night when everything around them is in darkness. They may be flying high above the clouds. They may be flying in dense fog. Still they know where the air roads are.

There are many different ways in which the pilots know where the air roads are. There are beacons of light along many air roads. These are very bright lights, set high on towers. They keep turning round and round.

Radio helps the pilot keep on the right air road. The radio is not a light beam, but a sound beam. It is sent out from the airport.

The airport broadcasts different sounds in different directions. The pilot knows which sound to follow. He follows that sound all the way to the airport. Even when he can see nothing at all, he follows the sound. He calls this "riding the beam."

The pilot may use his radio like a telephone, too. Through the radio he can talk to the airport. He signals to someone called a dispatcher.

When an airplane comes near the landing field, the pilot asks the dispatcher whether he may land. Then, if the dispatcher signals, "Come in," the pilot takes his airplane smoothly down to the landing field, up the runway, and to the airport.

The dispatcher may, however, tell a pilot to wait. Perhaps there is another airplane nearer the airport. That plane must land first. Later the dispatcher will send another signal, telling the pilot to land.

An airplane cannot stop in the air as a train stops on steel tracks. An airplane must keep on flying while waiting to land. The pilot must keep the airplane flying in slow, steady circles until he gets a signal from the dispatcher.

There is still another way in which the pilot uses the radio on his plane. He learns about the weather from men at far-away airports. He may be told that a storm is to come from the east, from the west, from the north, from the south. It may be a dangerous storm. The pilot must decide whether to land or to take his plane high above the storm clouds.

Air roads are the newest kind of roads because air travel is the newest kind of travel. When your grandfather was your age, travel by air was an unusual way to take a trip. So the people who had gone anywhere by plane talked about it a great deal. But now thousands of people go places by air every day. No one talks much about an air trip, because flying has become so common.

People in other lands also travel by air. Planes fly over the oceans. Travelers can make the trip across the ocean much faster by airplane than on the swiftest of steamships.

Sometimes you hear people say the world is growing smaller each day. It isn't, of course. People say that because travel is growing faster each day. Once it took a long, long time to make a journey of a hundred miles. Now, by airplane, such a trip takes a little less than an hour.

There are still other ways by which the different communities of our country are joined together. One of these is the telephone. When you talk to someone on a telephone your voice travels over an electric wire. Usually the sound travels as well for a long distance as for only a few miles. Telephone wires are truly magical wires. They join together the farthest parts of our land.

The telegraph wires join different communities together too, but they carry messages in a different way. Little dots and dashes spell out the words of the message. The words are written, then the message is carried to the person to whom it was sent. A messenger boy may carry the message from the telegraph office to the person for whom it is intended. Or someone at the office may telephone the message to the address.

Last of all, radio helps join the communities of our country together. Radio is new, too. When your grandfather was young, radio was only beginning, and everyone was excited about it. Now a radio is almost as common as a telephone. Perhaps in some places it is even more common.

These people are broadcasting a radio program that you may hear by just turning a knob.

*Kaufmann & Fabry Company*

Can you tune in on your radio? You turn a little knob or you push a button. You turn the dial to the station you want. Music comes to your ears. It may come from a station a thousand miles away, or two thousand miles. Or it may even come from the other side of the world.

You turn the dial again. Someone is telling a story you like. It seems that it is being told especially for you. You know it isn't, of course. Hundreds and hundreds of boys and girls are listening to that very same story at the very same time and enjoying it, too. Do you ever wonder about those boys and girls?

Your father comes to the radio. He wants to hear the weather report. He would like to know whether rain or storm is expected tomorrow.

If he is a farmer, it is important for him to know what the weather is likely to be. "Fair and warmer," the radio announcer is saying. "No rain is expected for this part of the country for three or four days." Usually the report is right.

Your father has been planning to cut wheat or to make hay or to take his farm produce to market. Good! Now he can do as he has planned.

Other people in your community are listening to the weather report, too. Can you think of good reasons why other people want to know what the weather will be the next day?

Now your father wants to hear the news of the country. He turns to another station and hears what has happened near and far in the world only an hour or so ago.

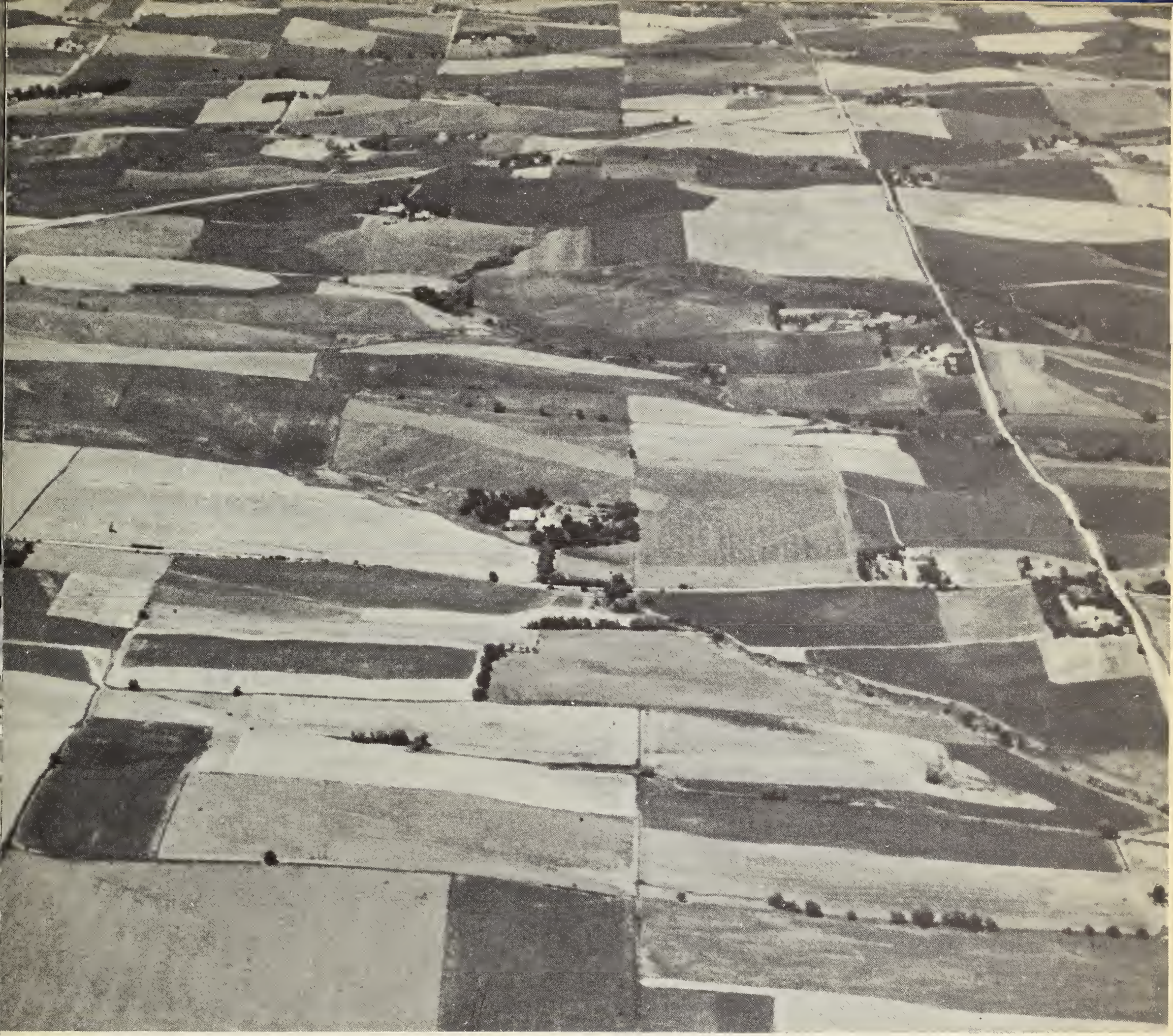
Turn the dial this way or that way. Something comes to you from the east, from the west, from the north, from the south. Do you see how the radio brings many, many widely separated communities close together? Can you see that our country is made up of many communities, all joined by roads, by wires, and even by air?

## *Great Round Beautiful World*

Suppose some day you were to take an airplane ride from one ocean to the other—all the way across the United States of America. Then you would get a fine idea of many different parts of the land.

You would look down on some of the mountains, some of the low hills, the valleys, the plains that make up our land. You would see some of the forests, some of the lakes, and some of the rivers. You might fly over one or more of the great national parks.

As you looked down through the windows of your plane, you might think that the United States looks something like a quilt—a patchwork quilt of many beautiful colors.



Ewing Galloway

From the air this country looks like a patchwork quilt. Do you see any crossroads?

Fields of ripe wheat would be the color of freshly baked bread. Fields of corn would be as green as grass. Pasture fields would be a different shade of green. Clover fields would be red with blossoms. Fields of flax would look as blue as the sea, and fields of ripe cotton would look like great patches of snow.

The rivers that run through the land would appear like shining ribbons of silver. And little lakes and ponds would seem like silvery patches. As for the very large lakes, they would stretch on and on under your swiftly flying plane.

If your airplane were flying low enough, you might see people at work in the fields. Or you might see them going to work in the mines, or picking fruit from the trees, or driving along the highways in shiny automobiles, or doing any number of things.

The people would look very small from where you were sitting high in the sky. Still, you might be able to see what they were doing. As you looked down at the people you might say to yourself, "All these people help to make our great country—our United States of America." And if you did say that, you would be quite right. They do.

On and on your airplane glides over the earth. Soon you will come to the ocean that lies on the other side of the United States. Then your journey will be over.

Your pilot brings your airplane safely down to the airport. That is a very busy and exciting place, where people are getting tickets to fly to many different parts of our land.

Planes are preparing to leave for different places all over the United States. You wonder if one of these planes will fly over the same road you have just traveled.

You learn that a great plane, an enormous plane, is about to take off for a flight over the ocean. It will land in a country thousands of miles away. Another plane from across the seas landed only a little while ago.

You think of the planes that fly swiftly, of the ships that sail over the oceans, of the radio messages that come from the other side of the world. As you think of all these things, you may say to yourself, "Our country is a part of the world—the great round world."

And if you do say that, you will be quite right. It is.

*Courtesy Boeing Aircraft Company*

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# For Teacher Reference

*Geography Around the Home* contains no treatment of formal geography. Yet every page develops simple understandings that are basic in preparing for a formal study of the subject in grades to follow. The understandings may be used as centers of interest in review, since reviews are more effective if the materials are reorganized for study. In schools carrying out an activity program thay may serve to suggest and guide units of work.

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# Interesting Books to Read

## WHERE PEOPLE LIVE

McCloskey, Robert, *Lentil* (The Viking Press). A good story about a little town. Clymer, Eleanor, *Here Comes Pete* (Robert M. McBride & Company). A good story about a little town. D'Aulaire, Ingri and Edgar P., *Don't Count Your Chicks* (Doubleday & Company, Inc.). A Scandinavian tale which gives a good idea of how flocks grow. Robinson, *On the Farm* (The Macmillan Company). A very good farm picture. Justus, May, *Sammy* (Albert Whitman & Company). Mountain farming. McCloskey, Robert, *Make Way for Ducklings* (The Viking Press). A good story of city life. Peet, Creighton, *How Things Work* (Henry Holt and Company). Good city pictures.

## FOODS PEOPLE EAT

Petersham, Maude F. and Miska, *Story Book of Wheat* (The John C. Winston Company). Wheat and wheat foods. Pyne, Mable, *The Little Geography of the United States* (Houghton Mifflin Company). Picture stories and maps about our country.

## EVERYDAY CLOTHING

Petersham, Maude F. and Miska, *Story Book of Things We Wear* (The John C. Winston Company). Stories about clothes. Woolen, B. R., *How Does Your Cotton Grow?* (Jacobs Press).The story of cotton growing. Carr, Mary Jane, *Children of the Covered Wagon* (Thomas Y. Crowell Company). A good book for information.

## HOUSES PEOPLE LIVE IN

Peet, Creighton, *How Things Work* and *This Is the Way We Build a House* (Henry Holt and Company). Good photographs and stories. Cavanah, Frances, *Our Country's Story* (Rand McNally & Company). A good picture of the westward movement.

## BETTER WAYS OF HAPPIER LIVING

Hurd, Edith Thacher and Friday, Theodore, *Jerry the Jeep* (Lothrop, Lee & Shepard Company). An interesting, stimulating story. Duvoisin, Roger, *All Aboard* (Grosset & Dunlap, Inc.). A good train story. Foley, Dorothy C., *When Our Ship Comes In* (Saalfield Publishing Company). A picture book of ships. Sterling, Helen, *Little Choo Choo* (Franklin Watts, Inc.). A story about a train. Pease, Josephine Van Dolzen, *This Is the World* (Rand McNally & Company). Good overall picture of the world for children.

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